

Genus Syngnathus Linnaeus

Syngnathus Linnaeus, Syst. Nat.,
ed. 10, pt. 1, p. 416, 1758. (Type
Syngnathus acus Linnaeus,
designated by Fowler, Proc. Acad.
Nat. Sci. Philadelphia, p. 93,
1906.)

Siphostoma Rafinesque, Carrat. Mus.
Anim. Plant. Sicil., p. 18, 1810.
(Type Syngnathus ^{pelagicus} ~~acus~~ Linnaeus,
designated by Jordan and Gilbert, Bull.
U. S. Nat. Mus., No. 16, p. 382, 1883.)

Siphonostomus Kaup, Cat. Lophobr.
Fish Brit. Mus., p. 48, 1856. (Type
Syngnathus ^{pelagicus} ~~acus~~ Linnaeus.)
(Emendation.)

Siphonostoma Duméril, Hist. Nat.
Poiss., vol. 2, p. 575, 1870. (Type
Syngnathus ^{pelagicus} ~~acus~~ Linnaeus.)

Dermatostethus Gill, Proc. Acad.
Nat. Sci. Philadelphia, p. 283, 1862.
(Type Dermatostethus
punctipinnis Gill, monotypic.)

Parasyngnathus Duncker, Mitteil.
naturh. Mus. Hamburg, vol. 32, p.
79, 1914 (1915). (Type Syngnathus
argyrostictus Kaup, orthotypic.)

Body long, very slender, not
 compressed, hexagonal or tetragonal,
 tapering in long tetragonal tail.
 Head usually slender, tapering
 gently to longer or shorter tube-
 like snout, with or without
 median keel. Opercle with
 straight, longitudinal keel,
 which complete or restricted to
 basal part; oblique lines or
 edges radiate from keel or
 wanting. Upper keels of trunk
 and tail discontinuous; lower
 keels of trunk and tail continuous;
 median keel of trunk and lower
 keels of tail discontinuous, but
 former and upper keel of tail
 continuous or subcontinuous.
 Eggs isolated in culture as cells
 on ventral surface of front part

East Indies, Philippines. A very handsome fish, and large vertical fins. The sexes are alike and the females apparently equally brilliant.

21546. Baybay Bay, Marañon Grande. March 13, 1909. Length 148 mm.

17056. Bisucay Island, Cuyo. April 9, 1909. Length 120 mm.

5141 and 21029. Little Santa Cruz Island, Zamboanga. May 28, 1908. Length 137 to 143 mm.

20533. Port Galera, Mindoro. October 27, 1909. Length 80 mm.

15347 and 20436. Port Talapa. June 3, 1909. Length 108 to 151 mm.

1 example. Romblon reef. March 26, 1908. Length 110 mm.

of tail, entirely protected by cutaneous folds which may contain more or less developed bony plates; these folds begin next anus, reach far behind subdorsal rings of tail and coalesce in median line, splitting lengthwise to release young fishes. Dorsal rays 21 to 45, fin inserted exclusively on front tail rings up to ninth or also on 1 to 3 of last trunk rings; dorsal base not elevated. Anal, caudal and pectoral present.

A large genus of the temperate and tropical seas of the globe, some in brackish and fresh water.

Elongated or ellipsoid; ventral $1\frac{2}{3}$
to $2\frac{2}{5}$; third anal spine $1\frac{3}{4}$ to $1\frac{4}{5}$
in ^{total} head; least depth of caudal
peduncle 2 to $2\frac{1}{5}$; pectoral 1.

Dark dusky brown generally.
Dark longitudinal bands on body,
each one at juncture of scales and
wide as pale interspaces. Vertical
fins and ventrals all blackish
generally, pectorals uniform dull
olive and in contrast with rest
of coloration. Iris with radiating
brownish blotches. Whole body,
excepting pectoral, though including
iris marked with scattered
brilliant white round spots,
evidently blue in life, and larger
on body than on fins. On last
dorsal rays large black ocellus
nearly large as eye.

Analysis of species

a.¹ Opercle with complete rectilinear keel; median trunk keel subcontinuous with upper or lower caudal keels.

b.¹ Dorsal on tail only.

c.¹ Snout equals or slightly longer or shorter than postorbital; trunk ventrally paler or reticulated with brown and tail spotted. djarong.

c.² Snout longer, less twice postorbital; trunk ventrally with 13 to 15 white crossbars. spicifer.

c.³ Snout longer than rest of head; trunk with 7 longitudinal series of pearly ocelli. pencilus.

b.² Front part of dorsal on last trunk rings.

d.¹ ~~Q. 16 to 18.~~ Q. 28 to 32. micromopterus.

c.¹ Rings 13 + 32 to 36. cyanospilus.

c.² Rings 15 + 42. uncinatus.

c.³ Rings 16 or 17 + 38 to 40. analicarens.

d.³ ~~Q. 33~~ Q. 33; rings 17 or 18 + 32 or 33. coquerellii.

d.¹ Q. 18; rings 14 + 31. nitidus.

1172
a.² Opercle with rather low keel,
restricted to basal third or less.

f.¹ Rings without spines.
g.² D. 16 to 18. micropopterus.
g.¹ D. 22. snout 2 in head.
h.¹ Snout $2\frac{1}{2}$ in head. balli.
h.² Snout 2 in head. modestus.
g.² D. 23; snout $1\frac{3}{4}$ in head.
maxweberi.

g.³ D. 29 to 31.

h.¹ Rings 17 + 32 to 35; snout
 $1\frac{4}{5}$ to $1\frac{7}{8}$ in head. pelagicus.

h.² Rings 19 + 37 (snout over 2
in head). temminckii.

g.⁴ D. 35 to 45; rings 18 to 21 +
38 to 45.

j.¹ Snout $1\frac{4}{5}$ to $1\frac{7}{8}$ in head.
aus.

j.² Snout $1\frac{3}{5}$ to $1\frac{3}{4}$ in head.
schlegeli.

f. Rings ending in spines;
eye prominent; D. 40 or 41;
rings 18 to 19 + 41 to 44. phlegon.

Syngnathus djarong Bleeker

Syngnathus djarong Bleeker, Verh.
Batavia. Genootsch. (Trosk.), vol. 25,
p. 22, 1853 (type locality, Panimbang,
West Java); Nat. Tijds. Ned. Indië,
vol. 7, p. (314) 325, 1854 (Perdana);
Act. Soc. Sci. Ind. Néerl., no. 9,
vol. 3, p. 4, 1857-58 (Trussan,
Sumatra); (Sumatra), vol. 8, p. 72,
1859 (Java; Sumatra). — Duméril,
Hist. Nat. Poiss., vol. 2, p. 545, 1870
(compiled). — Duncker, Mitteil.
naturh. Mus. Hamburg, vol. 32,
p. 80, 1914 (1915) (Leyte; Samar). —
Weber and Beaufort, Fishes Indo

as expanded to slightly convex behind with age, or tips moderately produced; least depth of caudal peduncle $2\frac{1}{4}$ to $2\frac{2}{5}$; pectoral $1\frac{1}{10}$ to $1\frac{1}{8}$; ventral 1 to $1\frac{1}{8}$.

In alcohol brown or drab brown, whitish below. Narrow gray white line from lower eye edge to gill opening then down to lower pectoral base. Iris gray or light brown. Fins all pale brownish, with oblique brown lines on soft dorsal and anal, and transverse on caudal.

East Indies and Philippines. This species differs from Anthias squamipinnis in its coloration and broader or less forked caudal fin, fewer filaments to the fins and in the presence of a light line, not a broad band, obliquely down

Austral. Archip., vol. 4, p. 79, 1922
 (Sinaloa; Nias; Java;
 Waigiu; New Guinea). — Duncker
 and Mohr, Mitteil. naturh. Mus.
 Hamburg, vol. 41, p. 17, pl. 2, fig. 5,
 1925 (Rein Bay and Zoller Bay,
 New Pommern; Langemoh
 Bay, Hausa Bay and Kelana Harbor,
 New Guinea). — Fowler, Mem.
 Bishop Mus., vol. 10, p. 113, 1928
 (reference).

Syngnathus spicifer var. djarong
Duncker, Spolia Zeylonica, vol. 7,
 p. 32, 1910; Mitteil. naturh. Mus.
 Hamburg, vol. 29, p. 269, 1911
 (Vulsoella and Trincomali).

much longer than gill filaments or $\frac{1}{8}$ in eye.

Scales 40 or 41 in lateral line to caudal base and 1 or 2 more on latter, 5 above, 12 to 14 below, 23 to 25 predorsal; 10 rows obliquely across cheek to angle of preopercle, of which 3 on preopercle flange; scales on head and body with few auxiliary basal small scales; fins all more or less finely scaled, especially basally; 5 rows of scales transversely across maxillary expansion. Scales with 13 to 15 basal radiating striae, 40 to 60 apical denticles and circuli fine.

D. X, 16, I or 15, I, fourth spine $2\frac{1}{4}$ in total head length, twelfth ray $1\frac{1}{4}$ to $1\frac{1}{3}$; A. III, 7, I, second spine 2 to $2\frac{1}{5}$, third ray $1\frac{1}{10}$ to $1\frac{2}{5}$; caudal 1 to $1\frac{1}{8}$, broadly crescentic, truncate

Syngnathus helfrichii Bleeker, Nat.¹⁷⁵
Ned. Ind. Ned. Ind. Ind., vol. 9, p. (418) 428,
1855 (type locality, Bandjermassing,
Borneo); Act. Soc. Sci. Ind. Néerl.
(Sumatra), vol. 8, p. 72, 1859 (Borneo;
Sumatra). — Duméril, Hist. Nat.
Pois., vol. 2, p. 547, 1870 (compiled).

Corythoichthys matterni Fowler, Proc.
Acad. Nat. Sci. Philadelphia, p. 11,
fig. 5, 1918 (type locality, Philippines).

transversely on side become more distinct posteriorly, 2 crossing caudal peduncle. Under surface of body paler than back. Top of head slate, with orange blotch above and behind eye; reddish area on occipital region, another before eyes and again on snout; pale vermilion bar across preorbital; premaxillary membrane and mouth angle vermilion, also roof and floor of mouth. Iris orange. Dorsal dull red, becomes vermilion posteriorly. Anal similar, but lighter. Caudal and paired fins reddish, membranes clear.

38 examples. Atulayan Bay,
Lagonoy Gulf, Luzon. June 17, 1909.
Length 48 to 59 mm.

One example. Balambar, Cebu.
April 2, 1908. Length 50 mm.

Twelve examples. Kato anchorage,
Luzon. June 18, 1907. Length 46 to
61 mm.

35 examples. Port Dupon, Leyte.
March 17, 1909. Length 40 to 60 mm.

92 examples. Romblon. March 25,
1908. Length 30 to 51 mm.

Two examples. Rosa Island Anchorage,
Lagonoy Gulf, Luzon. June 18, 1909.
Length 57 to 60 mm.

↑
One example. Subig Bay, Luzon.
January 7, 1908. Length 59 mm.

38 examples. Atulayan Bay,
Lagonoy Gulf, Luzon. June 17, 1909.
Length 48 to 59 mm.

One example. Balambar, Cebu.
April 2, 1908. Length 50 mm.

Twelve examples. Kato anchorage,
Luzon. June 18, 1907. Length 46 to
61 mm.

35 examples. Port Dupon, Leyte.
March 17, 1909. Length 40 to 60 mm.

92 examples. Romblon. March 25,
1908. Length 30 to 51 mm.

Two examples. Rosa Island Anchorage,
Lagonoy Gulf, Luzon. June 18, 1909.
Length 57 to 60 mm.

D. 5160. Tinakta Island (N.), S.
72° W., 2.75 miles (lat. 5°12'40"N.,
long. 119°55'10"E.), Sulu Archipelago.
February 22, 1908. Length 35 mm.

Depth 20 to $25\frac{1}{4}$, $6\frac{1}{8}$ to $7\frac{1}{8}$ to vent;
 head 8 to $10\frac{1}{3}$, $3\frac{1}{4}$ to $3\frac{3}{5}$ to vent,
 width $2\frac{4}{5}$ to 3. in its length.
 Snout 2 to $2\frac{1}{6}$ in head; eye $5\frac{1}{2}$ to 6,
 $3\frac{1}{8}$ in snout, greater than
 interorbital; maxillary 2 in
 eye; interorbital $1\frac{3}{4}$ to $2\frac{1}{2}$ in
 eye, concave; opercle with
 horizontal keel.

Rings 15 or 16 + 38 or 39. Upper
 trunk keel and upper caudal
 keel discontinuous; lower trunk
 keel and lower caudal keel
 continuous; median lateral trunk
 keel bends down posteriorly, usually
 discontinuous, sometimes subcontinuous
 with lower caudal keel. Brood
 organ of male over 16 caudal rings.

D. 25 to 28, on 6 or 7 caudal
 rings, fin height $3\frac{3}{5}$ in head;

fin, and soft fin with spine and 10 rays. Anal with 3 spines and 7 or 8 rays. Caudal emarginate or forked.

Indian Ocean, East Indies and Japan. Apparently a single species.

A. rays 2; caudal length $3\frac{3}{4}$ in total head length; pectoral 5, rays 15.

Uniform dull brown, speckled and dotted minutely and irregularly with deeper or darker brown. Broad dark brown band from eye along side of snout. From behind each eye obliquely down below deep brown bar, not joined on lower surface of head. Side of head with brownish dots and bars, especially on opercle below. Iris slate. Fins uniformly pale.

Genus Aeropoma Schlegel

Aeropoma Schlegel, Fauna Japonica,
Poiss., pts. 2-4, 1843, p. 31. Atypic.
Type Aeropoma japonicum Günther,
affixed by Günther, Cat. Fishes Brit.
Mus., vol. 1, 1859, p. 250.

Body oblong, compressed. Mouth
large, lower jaw protruding. Jaws
with small canines and palatines
toothed. Opercle extends in long point.
Preopercle entire. Gill rakers
lanceolate, 14 to 16 in lower branch
of first arch. Pseudobranchiae
large. Branchiostegals 7. Scales
moderate, weakly ctenoid, thin,
deciduous. Vent anterior, nearer
ventral base than anal origin.
Dorsal with 7 to 9 spines in spinous

1178
9 examples. Abulayan Bay anchorage,
Luzon Gulf, Luzon. June 17, 1907.
Length 73 to 88 mm.

Three examples. Bayang River four
miles from mouth of Abulayan Bay,
Mindoro. December 13, 1908. Length
84 to 94 mm.

Two examples. Balayan Bay, near
beach, Taal. January 19, 1908. Length
53 to 62 mm.

One example. Batangas, Luzon.
June 7, 1908. Length 112 mm.

Three examples. Camp Overton,
Mindanao. August 15, 1909. Length
53 to 83 mm.

One example. Capulayan Bay, ^{Papilao; Chica Island.}
December 23, 1908. Length 80 mm.

D. 5442, One example. Lingayen
Gulf, east of Point Guceet, west
coast of Luzon. May 11, 1909. Length
101 mm.

One example. Davao, Gulf of Davao, Mindanao. May 16, 1908. Length 62 mm.

One example. Zolo. February 7, 1908. Length 84 mm.

One example. Zolo. September 16, 1907. Length 71 mm.

One example. Malabang River, spring at source. May 21, 1908. Length 70 mm.

One example. Malinao River, eastern Palawan. April 2, 1909. Length 85 mm.

One example. Manila Bay, Luzon. December 8, 1909. Length 77 mm.

23 examples. Mansalay, Mindoro. June 3, 1908. Length 23 to 85 mm.

Three examples. Maricaban Point, Luzon. July 20, 1908. Length 73 to 75 mm.

^{Eleven}
~~One~~ example. Luto River tidewater.

June 15, 1907. Length ^{82 to} 138 mm.

One example. Luto Bay, Palawan Island. December 21, 1908. Length 127 mm.

Siphamia versicolor (Smith and Radcliffe).

Amia versicolor Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 41, 1912, p. 257,
fig. 3. Usada Island near Jolo; Cataingan
Bay, Masbate; Pangasinan Island;
Cannamahala Bay, Luzon; Sibutu Island
and North Balabac Strait. — Fowler,
Copeia, no. 58, June 18, 1918, p. 63 (Philippines);
Proc. Acad. Nat. Sci. Phila., 1927, p. 273
(Philippines).

One example. Nanjan Anchorage,
Mindoro. June 5, 1908. Length 87 mm.

Two examples. Boyer Point, Panay.
February 5, 1908. Length 86 to 87 mm.

One example. Alangapo, Luzon.
January 7, 1908. Length 83 mm.

Three examples. Apol. August 4, 1901.
Length 82 to 85 mm.

One example. Paluan River,
Mindoro. December 11, 1908. Length
87 mm.

Six examples. Panabutan Bay,
Mindanao. February 5, 1908. Length
82 to 90 mm.

One example. Pangauron River,
Port Caltan, Busuanga Island.
December 16, 1908. Length 110 mm.

¹³
85 examples. Port Dupon, Leyte.
March 17, 1908. Length 80 to 87 mm.

tongue to caudal peduncle near ventral surface. First dorsal with 6 spines, anal with 2. Soft dorsal and anal with 10 rays.

According to Mc Culloch the silvery lateral gland is likely a phosphorescent organ.

22 examples. Port Dupon, Luzon.
May 6, 1905. Length 75 to 85 mm.

One example. Port Maitchi, Luzon.
November 20, 1905. Length 86 mm.

Three examples. Port San Vicente,
San Vicente Island, northern Luzon.

November 15, 1908. Length 48 to 78 mm.
Largest male with brood pouch.

^{Four} One example. Pucot River,
Mariveles, Manila Bay. January 29,
1909. Length 92 to 113 mm.

Thirteen examples. Ragay Bay,
Ragay Gulf. March 9, 1909. Length
28 to 83 mm.

One example. Ragay River, Ragay
Gulf. March 10, 1909. Length 80 mm.

Two examples. Rasa Anchorage,
Lagonoy Gulf, Luzon. June 18, 1909.
Length 87 to 92 mm.

Genus Siphamia Weber.

Siphamia Weber, Notes Leyden Mus., vol. 31, 1909, p. 168. Type Siphamia tubifer Weber, monotypic.

Adenapogon McCulloch, Records Austral. Mus., vol. 13, 1921, p. 133. Type Apogon roseigaster Ramsay and Dgilby, orthotypic.

Band of villiform teeth in each jaw, without canines and some minute teeth on vomer; palatines with or without teeth. Preopercle edge entire, ridge serrated (entire in Adenapogon). Gill rakers lanceolate, about 12 on lower limb of first gill arch. Scales stenoid or cycloid (Adenapogon). Cheeks largely or entirely scaleless. Lateral line complete. Silvery canal extends backwards on each side from

Two examples. [1280.] River at
Pasacao Bay, Ragay Gulf, Luzon.
March 9, 1909. Length 118 to 144 mm.

One example. River at Port Dupon,
Leyte. March 17, 1909. Length 84 mm.

Three examples. Sablayan Bay,
Mindoro. December 12, 1908. Length
83 to 88 mm.

Ten examples. Sablayan Bay,
Estero, Mindoro. December 13, 1908.
Length 85 to 97 mm.

Two examples. San Miguel Harbor,
Ticao Island. April 21, 1908. Length
69 to 72 mm.

One example. Santiago River,
Pagapas Bay, Luzon. February 20, 1909.
Length 82 mm.

One example. D. 5568. Vinzonsan Island
(N.), West, 0.7 mile (lat. $15^{\circ}45'50''N$,
long. ~~120^{\circ}15'30''E~~ $120^{\circ}15'30''E$), north of
Tawi Tawi. September 22, 1908. Length 70 mm.

Length 91 mm.

[D. 5517]. Point Tagolo Light, S. 83° W., 10.5 miles ($8^{\circ}45'30''$ N., $123^{\circ}33'45''$ E.), Mindanao. August 9, 1909. ~~Don~~ 169 fathoms. Length 60 to 68 mm. 3 examples.

[D. 5523]. Point Tagolo Light, S. 48° W., 6.7 miles ($8^{\circ}48'44''$ N., $123^{\circ}27'35''$ E.), Mindanao. August 10, 1909. Length 64 to 81 mm. 3 examples.

1183

Two examples. Subig Bay, Luzon.
January 7, 1908. Length 63 to 80 mm.

Five examples. Taal Anchorage.
February 20, 1909. Length 55 to 91 mm.

One example. D. 5561. Ternabal
Island (NW.), S. 36° W., 0.2 mile
(lat. $5^{\circ}50'45''$ N., long. $121^{\circ}01'15''$ E.),
vicinity Zolo Island. September 19,
1909. Length 99 mm.

One example. Varadero Bay,
Luzon. July 20, 1908. Length 49 mm.

Three examples. Varadero Bay.
July 20, 1908. Length 68 to 72 mm.

^{four}
~~thirteen~~ examples. Varadero Harbor.
July 22, 1908. Length 45 to 75 mm.

One example. D. 5456. Legaspi
Light, S. 70° W., 6.7 miles (lat. $13^{\circ}11'$
 $10''$ N., long. $123^{\circ}51'52''$ E.), Luzon.
June 7, 1909. Length 28 mm., to end
of broken caudal.

fathoms. Length ^{61 to} 65 mm.

718

[D. 5501] Macabalan Point Light,
S. 35° E., 8.2 miles ($8^{\circ}37'33''$ N., $124^{\circ}35'$
E.), Mindanao. August 4, 1909. In 214
fathoms. Length 62 to 81 mm. 10 examples.

[D. 5502] Macabalan Point Light,
S. 35° E., 8.2 miles ($8^{\circ}37'37''$ N., $124^{\circ}35'$
E.), Mindanao. August 4, 1909. In 214
fathoms. Length 62 to 87 mm. 15 examples.

[D. 5503] 3162. Macabalan Point Light,
S. 31° E., 6.6 miles ($8^{\circ}36'26''$ N., $124^{\circ}36'08''$
E.), Mindanao. August 4, 1909. In 226
fathoms. Length 63 to 87 mm. 20 examples.

[D. 5504] 3752. Macabalan Point
Light, S. 39° E., 6 miles ($8^{\circ}35'30''$ N., 124°
 $36'$ E.), Mindanao. August 5, 1909. In 200
fathoms. Length 80 mm.

[D. 5265] 1756. Matocot Point, Luzon,
S. 17° E., 3.30 miles ($13^{\circ}41'15''$ N., $120^{\circ}00'$
 $50''$ E.). June 6, 1908. In 135 fathoms.

One example. D. 5596. Zamboanga
Light, N. 31° W., 0.1 mile (lat. $6^{\circ}54'$
 $00''$ N., long. $122^{\circ}04'30''$ E.),
Mindanao. October 10, 1909.
Length 85 mm.

A. N. S. P., No. 47484. Philippine
Islands. Commercial Museum
of Philadelphia. Length 138 mm.
Type of Corythoichthys matterni.

In 145 fathoms. Length 78 mm.

[D. 5412] 3079. Lavis Point Light, N. 21° E., 5.5 miles ($10^{\circ}09'15''$ N., $123^{\circ}52'15''$ E.). March 23, 1909. In 162 fms. Length 51 to 79 mm. 12 examples.

[D. 5416] 4512 to 4515. Lavis Point Light, N. 12° E., 2.9 miles ($10^{\circ}11'30''$ N., $123^{\circ}53'30''$ E.). March 25, 1909. In 150 fathoms. Length 51 to 74 mm.

[D. 5417] 1929 and 1930. Lavis Point Light, N. 10° E., 3.5 miles ($10^{\circ}10'11''$ N., $123^{\circ}53'15''$ E.). March 25, 1909. In 159 fathoms. Length 71 to 77 mm.

[D. 5418] Lavis Point Light, N. 16° E., 5.6 miles ($10^{\circ}08'55''$ N., $123^{\circ}52'30''$ E.). March 25, 1909. In 159 fathoms. Length 67 to 81 mm. 16 examples.

[D. 5183]^{1332 and} 1333. Luzaran Light, S. 29° E., 4 miles ($10^{\circ}32'48''$ N., $122^{\circ}26'$ E.), between Panay and Negros. March 30, 1909. In 96

1185

Syngnathus spicifer Rüppell

Syngnathus spicifer Rüppell, Neue
Wirbelth. Fische, p. 143, pl. 33, fig. 4,
1835 (type locality, Jor, Red Sea). —
Kaup, Cat. Lophobr. Fish Brit. Mus.,
p. 34, 1856 (Macassar, Celebes,
Pondicherry, Guinea). — Day, Fishes
of Malabar, p. 264, 1865. — Peters,
Monatsb. Akad. Wiss. Berlin, p. 276,
1868 (^{Legaspi and Paracali,} Luzon). — Günther, Cat. Fish.
Brit. Mus., vol. 8, p. 172, 1870
(Zanzibar, Rovuma River, Zambesi
River mouth, Java, Cerau, Borneo,
Luzon, type of Syngnathus biserialis
listed from China). — Duméril,
Hist. Nat. Poiss., vol. 2, p. 546, pl.
174, fig. 1 (Pondicherry; Zanzibar).
— Klunzinger, Verh. zool. bot. Ges.
Wien, vol. 21, p. 650, 1871, (Red Sea).

Anthias albofasciatus new species.

Depth $3\frac{1}{2}$; head $3\frac{1}{4}$, width $1\frac{7}{8}$. Snout $4\frac{4}{5}$ in head from snout tip; eye 3, little greater than snout or interorbital; maxillary reaches opposite middle of eye, expansion $1\frac{2}{3}$ in eye, length $2\frac{1}{8}$ in head from snout tip; teeth fine, pointed, in narrow bands in jaws, on vomer and palatines; pair of wide set upper canines, lower jaw with close set divergent mandibular pair and larger lateral curved anterior canine; interorbital $3\frac{3}{4}$, convex; preopercle edge serrate; opercle with 3 distinct spines. Gill rakers $11 + 23$, finely lanceolate, twice gill filaments or $1\frac{2}{3}$ in eye.

Scales 35 in lateral line to caudal base and 1 more on latter,

Bleeker, Nederl. Tijds. Dierk., vol.
 4, p. 126, 1873 (1874) (reference). —
Day, Fishes of India, pt. 4, p. 678,
 pl. 174, fig. 1, 1878. — Peters, Trans.
 Roy. Soc. Arts Sci. Mauritius, new
 ser., vol. 11, p. 58, 1883 (Seychelles).
 — Day, Fauna British India, Fishes,
 vol. 2, p. 462, 1889. — Weber, Zool.
 Ergeb. Reis. Nederl. Ost Indien,
 vol. 3, p. 428, 1894 (Tangha River at
 Balaukenha, Celebes). — Elera,
 Fauna Filipinas, vol. 1, p. 596, 1895
 (Luzon, Manila, Cavite). — Duncker,
 Mitteil. Naturh. Mus. Hamburg,
 vol. 21, p. 188, 1903 (1904) (Port
 Dickson). — Regan, Biol. Central.
 Amer., Pisces, p. 54, 1908 (fresh
 water at Tehuantepec). — Weber,
 Nova Guinea, vol. 5, pt. 2, p. 228, 1908
 (Klipang River, north New Guinea). —

Length 85 to 101 mm.

6431. West coast Palau Island.
November 18, 1908. Length 79 mm.

6904 and 6905. Danawan and
Xi Uuil Islands, vicinity Darvel
Bay, Borneo. September 26, 1909.

Length 87 to 125 mm. [1499 and 2000.]

12780. Limbe Strait, Celebes.
November 10, 1909. Length 57 to 84 mm.
8 examples.

4 examples. Limbe Strait. November
11, 1909. Length 62 to 75 mm.

12181, 12182, 13528, 13829 Powati
Harbor, Makyan Island. November 28,
1909. Length 85 to 101 mm. [2000.]
6 examples.

Günther, Journ. Mus. Godeffroy, vol.
 19, pt. 17, p. 429, 1910 (Cook-Islands;
 Brown). — Beaufort, Bijl. Dierk.
 Amsterdam, vol. 19, p. 102, 1913
 Wakia, Waigiu. — Weber, Stooge
 Exped., vol. 57, Fische, p. 107, 1913
 Raja. — Suncker, Mitteil. Naturh.
 Mus. Hamburg, vol. 32, p. 77, 1914
 1915. Kzeir. — Regan, Ann.
 Durban Mus., vol. 2, p. 197, 1919
 Durban, Natal. — Weber and
Beaufort, Fishes Indo Austral.
 Archip., vol. 4, p. 80, 1922. Dorch,
 Klip-ay River and British New Guinea.

T — Barnard, Ann. South Afric. Mus.,
 vol. 21, pt. 1, p. 289, June 1925 (Natal).
 fig. 4, 1925. Huve Harbor, Jacquinot
 Bay, Hanum Harbor, Reio Bay and
 west coast New Guinea,
 Friedrich Wilhelm Harbor and

Günther, Journ. Mus. Godeffroy, vol.
 17, pt. 17, p. 457, 1910 (Godeffroy, Siam). — Beaufort, Bijl. Dierk.
 Amsterdam, vol. 17, p. 102, 1913
 Wakia, Wugiu. — Weber, Viboga
 Exped., vol. 57, Fische, p. 137, 1913
 Raja. — Duncker, Mitteil. Naturh.
 Mus. Hamburg, vol. 32, p. 77, 1914
 1915. Koser. — Regan, Ann.
 Durban Mus., vol. 2, p. 177, 1917
 Durban, Natal. — Weber and
Beaufort, Fishes Indo Austral.
 Archip., vol. 4, p. 80, 1922. Doreh,
 Khipay River and British New Guinea.
 — Duncker and Koser, Mitteil. Naturh.
 Mus. Hamburg, vol. 41, p. 17, pl. 2,
 fig. 4, 1925. Merve Harbor, Jacquinot
 Bay, Haam Harbor, Rein Bay and
 west coast New-Guineania,
 Friedrich Wilhelm Harbor and

2069 to 2072 [D. 35136]. Jolo.
 February 14, 1908. Length 103 to 105
 mm.

18563 and 18564 [1713]. Malunipa
 Island, east of Zamboanga.
 September 8, 1909. Length 107 to 108 mm.

21978. Murciélagos Bay,
 Mindanao. August 9, 1909. Length
 53 mm.

16 examples. Port Maricaban.
 July 21, 1908. Length 30 to 73 mm.

11499. Sulade Island, vicinity Jolo.
 September 17, 1909. Length 99 mm.

16032. Sulade Island. September
 18, 1909. Length 88 mm.

[1738 and 1739] [D. 5478]. Tacbac
 Point, Leyte. July 29, 1909. Length
 81 to 120 mm. 7 examples.

16245, 16246, 16248, 16251, 16252,
 16254. Teomabal Island, vicinity Jolo.

Dörperspitz, New Guinea. — Fowler,
Mem. Bishop Mus., vol. 10, p. 113, fig.
23, 1928 (Kusie). — Chev, Biol. Bull.
St. John's Univ., no. 1, p. 97, January
1931 (reference). — Chevey, Inst.
Scén. Indo Chien, 1^{re} Note, p. 15,
August 25, 1932 (Thudamot;
Phnompenh).
Proc. Acad. Nat. Sci. Philadelphia,
vol. 77, p. 267, 1927 (Bacon; parat
Philippines; type of Corythoichthys
materni);

Sygnathus spicifer Jatzow and Lenz,
Abhandl. Senckenberg. naturf. Ges.,
vol. 21, p. 529, 1899 (Zanzibar).

he mentions but one example as 117 mm. long he gives the soft dorsal rays as 16 or 17 and his figure shows 18. Anthias elongatus Franz is very similar, if not synonymous, differing chiefly in its uniform red color. As Pseudanthias elongatus Tanaka describes it with $8+20$ gill rakers on an example 140 mm., which length is greatly in excess of any of our materials.

Fig. Descript. Fishes of Japan, vol. 31, June 27, 1921, p. 580, pl. 144, fig. 401; vol. 32, July 1, 1922, p. 583 (Tokyo).

Corythoichthys spicifer Jordan and
Seale, Bull. Bur. Fisher., vol. 26,
p. 9, 1906 (1907) (Manila; Cavite). —
Jordan and Richardson, Bull. Bur.
Fisher., vol. 27, p. 245, 1907 (1908)
(Apurii). — Kendall and Goldborough,
Mem. Mus. Comp. Zool., vol. 26, p. 264,
1911 (Kusie, Carolines).

and back from the lower eye edge
to the pectoral base. It is somewhat
like Anthias cooperi Regan, but that
species is figured with scaleless
fins and described with 47 to 49
scales in its lateral line. While

at pectoral margin, top of
head dusky olive; blood red
fade to pale red after death.
copper red bands in life,
silvery gray. Four or 5 broad
in life, after death fading
anteriorly, suffused with dusky

length 212 to 218 mm. [1165] Vicks

Washington February 23, 1909.

8019, 15723 [1165]. (St. Bonaventura)

Syngnathus gastrotaenia Bleeker,
Nat. Tijds. Ned. Indië, vol. 3, p.
690) 713, 1852 type locality,
Wahai, Ceram); Verh. Batavia.
Genoot. (Trosk.), vol. 25, p. 22,
1853 (Wahai; Act. Soc. Sci.
Ind. Néerl. Sumatra), vol. 8,
p. 72, 1859 (Ceram); Nat. Tijds.
Ned. Indië, vol. 22, p. 110, 1860
(Buru); Arch. Néerl. Sci. Nat.
Harlem, vol. 2, p. 397, 1867
(Halmahera); Verslag. Alaad. Wet.
Amsterdam, ser. 2, vol. 2, p. 281, 1868
~~Alaad~~

Pellegrin, Bull. Soc. Zool. France, vol. 39, 1914,
p. 229 (Nosy Bé, Madagascar). Pearson, Ceylon

(Red Sea).

Smith. Wien, vol. 21, 1871, p. 577 (Korea).

Kunze) — Klunzinger, Zool. jost. bot.

Abad. West. Berlin, 1868, p. 257 (Paracat).

fig. 5. Marshall — Allen, Munich.

have Winkel. (Fische, 1835, p. 5, pl. 2,

Stropho-cormus lineatus Rüppell,

Wien, vol. 21, 1927, p. 494 (Katal coast).

Wagner) — Barnard, Ann. South Africa.

Abad. Amsterdam, 1913, p. 112 (Zanok).

Kura Kant; Tur) — Beaufort, Brighton.

Strom, Manana, Machana, Amberna,

vol. 65, 1913, p. 212 (Port of Bay, Kumbat).

vol. 37 (Katal) — Wolke, Albana Albana.

thick lips; upper jaw not
barbel. Gill-rakers few, short, weak
and each with several points. Pseudo-
branchiae well developed. Pharyngeal
teeth 2, 4 — 5, 2, or 2, 5 — 5, 2, or 1, 2, 5 —
surface obsolete, tips

1191

(Dorey, New Guinea). — Peters,
Monatsber. Akad. Wiss. Berlin,
p. 276, 1868 (1869).

Syngnathus spicifer var. gastrotaenia
Duncker, & Spolia Zeylan., vol. 7,
p. 32, 1910.

Corythoichthys gastrotaenia Kump,
Cat. Lophobr. Fish Brit. Mus.,
p. 27, 1856 (Wahni).

Syngnathus tapeinotoma Bleeker,
Nat. Tijds. Ned. Indië, vol. 6, p.
375, 1854 (type locality, Anjer, Java);
vol. 7, p. 314, 1854 (Anjer); Act.
Soc. Sci. Ind. Néerl., vol. 8
(Sumatra), p. 72, 1859 (Java). —
Günther, Cat. Fish. Brit. Mus., vol.
8, p. 172, 1870 (compiled). — Duméril,
Hist. Nat. Poiss., vol. 2, p. 548,
1870 (compiled). — Klunzinger,
Verh. zool. bot. Ges. Wien, vol.
p. 651, 1871.

Anthias tanakai, new species,

Depth $2\frac{3}{5}$ to $3\frac{1}{10}$; head $2\frac{4}{5}$ to $3\frac{1}{8}$, width 2 to $2\frac{1}{8}$. Snout $4\frac{2}{5}$ to 5 in head from snout tip; eye $2\frac{4}{5}$ to $3\frac{2}{3}$, greater than snout, greater than interorbital in young to $1\frac{1}{4}$ with age; maxillary $\frac{3}{5}$ to $\frac{3}{4}$ in eye, expansion $1\frac{1}{4}$ to $2\frac{1}{4}$ in eye, length 2 to $2\frac{1}{5}$ in head; teeth fine, in narrow bands in jaws, anteriorly 2 wide set canines

Almoukter, Lemaire, Bagan, Flores,
Cura, Ceram, Ambon, Borneo, Am,
New Guinea, (Philippines). — Day,
Fishes of India, pt. 1, 1873, p. 48, pl. 9,
fig. 1 (Amboina). — (Peters, naturalist.
Arch. Nat. Berlin, 1876, p. 436
(Mauritius). — Martens, Fauna, Zool.
Batavia, vol. 1, 1876, p. 386 (Muntok,
Banka, Ambon (Rue). — Meyer, Amph.
Pac. Ocean, vol. 14.

Corythoichthys fasciculatus Kaup,
Archiv. Naturges., vol. 19, pt. 1, p. 231,
1853 (type locality, Java) (no
description).

Sparus laticeps Bleeker, Verhandel. Akad.
Wetensch. Amsterdam, vol. 18, no. 3, 1879,
p. 1 (Mauritius).

Chrysophrys cristiceps (not Cuvier) Castelnau,
Mém. Poiss. Afrique Australe, 1861, p. 22.

$\frac{1}{m}$ Pappe, Synopsis Edible Fishes Cape,
ed. 2, 1866, p. 13. $\frac{1}{m}$ Thompson, Marine
Biology. Rep. South Africa, no. 2, 1914, p. 100
(habits), no. 4, 1918, p. 92. $\frac{1}{m}$ Van Bonde,
Fishes Marine Surv. South Africa, Special
Rep. no. 1, 1923, p. 19.

Chrysophrys algoensis Castelnau, Mém. Poiss.
Afrique Australe, 1861, p. 22. Algoa Bay,
 $\frac{1}{m}$ Thompson, Marine Biology. Rep. South
Africa, no. 4, 1918, p. 91.

Chrysophrys pugicephalus Gilchrist and
Thompson, Ann. South African Mus., vol.
6, 1908-10, p. 234. Off Durban, Natal;
Ann. Durban Mus., vol. 1, pt. 4, 1917, p. 362.
 $\frac{1}{m}$ Van Bonde, Fishes Marine Surv. South

^{Archip. Nat. Ges., vol. 19, pt. 1, p. 23, 1853/1854}
Corythoichthys fasciatus Kaup,
Cat. Lophobr. Fish Brit. Mus.,
p. 27, 1856 (name in synonymy).

Syngnathus fasciatus Duméril,
Hist. Nat. Piss., vol. 2, p. 561, 1870
(type locality, Java). — Duncker,
Mitteil. Naturh. Mus. Hamburg,
vol. 32, p. 86, 1914 (1915) (compiled).

Syngnathus micrognathus (Kuhl
and Van Hasselt) Kaup, Cat.
Lophobr. Fish Brit. Mus., p. 27,
1856 (name in text).

— Weber and Beaufort, Fish. Indo
Austral. Archip., vol. 4, p. 83, 1922
(compiled).

1479

Java, Bawean, Bali, Solor, Flores,
Timor, Celebes, Sangi, Ternate,
Halmaheira, Ceram, Amboina, Goram,
Waigiu, Luzon). — Peters, Monatsb. Akad.
Wiss. Berlin, 1876, p. 438 (Mauritius).
— Bleeker, Atlas Ichth. Ind. Néerl., vol.
9, 1877, pl. (1) 390, fig. 3. — Klunzinger,
Fische Roth. Meer., 1884, p. 66. — Vaillant,
Bull. Soc. Philomath. Paris, ser. 8, vol. 1, 1889,
p. 58 (Sumatra). — Day, Fauna Brit.
India, vol. 2, 1889, p. 19, fig. — Boulenger,
Cat. Fishes Brit. Mus., vol. 1, 1895, p. 340
(Zanzibar, Ceylon, China, Andamans, Sumatra,
Manado, Amboyna, Australia, East
Australia, Fiji, Levuka, Tonga, Samoa,
Hawaii, Micronesia). — Steindachner,
Abhandl. Senckenberg. Naturf. Gesell.,
vol. 25, 1900, p. 414 (Ternate). — Pellegrin,
Bull. Mus. Hist. Nat. Paris, vol. 13, 1907, p.
204 (Tuliar, Madagascar). — Jordan and

Microphis tenuis Blyth, Journ.
Asiatic Soc. Bengal, vol. 27, p. 272,
1858 (type locality, Lendaman).
— Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 156, 1870 (compiled).

Syngnathus lunni Bleeker, Nat.
Tyds. ned. Indië, vol. 20, p. 220, 1859-
60 (type locality, Tandjong); Act.
Soc. Sci. Ind. Néerl. (Sumatra),
vol. 8, p. (14) 70, 72, 1859 (Tandjong).
— Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 172, 1870 (South Sumatra).
— Duméril, Hist. Nat. Poiss., vol.
2, p. 548, 1870 (compiled).

Syngnathus argyrostictus (not
Kaup) Jay, Fishes of Malabar, p.
264, 1865; Proc. Zool. Soc. London,
p. 316, 1865.

Anthias cichlops (Bleeker).

Verranus cichlops Bleeker, Nat. Tijds.
Ned. Indië, vol. 4, 1853, p. 245. Priaman,
Sumatra.

Anthias cichlops Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 503 (note). —
Boulenger, Cat. Fishes Brit. Mus., vol. 1,
1895, p. 328 (compiled). — Elera, Cat.
Fauna Filip^{vol. 1}, 1895, p. 458 (Vamar,
Borongan).

Pseudanthias cichlops Bleeker, Atlas
Ichth. Ind. Néerl., vol. 7, 1873-76, p. 20,
pl. (11) 289, fig. 1 (Priaman).

Depth $3\frac{1}{5}$; head $3\frac{1}{10}$. Snout $4\frac{1}{10}$ in head;
eye $4\frac{1}{10}$, subequal with snout and
interorbital; maxillary reaches $\frac{3}{5}$ in
eye, expansion $1\frac{1}{4}$, length $2\frac{1}{4}$ in head
from snout tip; hind preopercle edge
coarsely serrated.

Corythoichthys pullus Smith and Seale,
Proc. Biol. Soc. Washington, vol. 19,
p. 75, fig., June 4, 1906 (type locality,
Rio Grande, Mindanao).

1909, p. 183 (Takao, Formosa); Proc. U. S.
 Nat. Mus., vol. 37, 1910, p. 457, fig. 12
 (Takao). — Jordan and Metz, Mem.
 Carnegie Mus., vol. 6, no. 1, 1913, p. 32
 (Fusan, Korea). — Tanaka and Matsuura

a. Ranges without spine.

- 1. D. 22 & 2 modesta 8
- 2 D. 23 = A. $1\frac{3}{4}$ ~~maxillaris~~ 7
- 3 D. 29-31 pelagicus 10
- R. 17+32-35 = A. $1\frac{4}{5}$ - $1\frac{7}{8}$ temminckii 11
- R. 19+37 (A. var. 2)
- 4 D. 35-45 = R. 18-21+38-45 oculus 12
- A. $1\frac{4}{5}$ - $1\frac{7}{8}$ in h. phlegatus 13
- A. $1\frac{3}{5}$ - $1\frac{3}{4}$ in h.
- A. evidently over $1\frac{1}{2}$ in

a. 2 Ranges super in spine: eyes prominent. phlegatus 14

D. 40-41 = R. 18
 on 1-3+10-12; ~~D~~ 1. 1-3+10-12

19 to

7 $\frac{2}{5}$ toto $\frac{3}{5}$ to 1197Depth $2\frac{3}{4}$; head 10, width $2\frac{3}{4}$.Snout $1\frac{9}{10}$ in head from snout tip;eye $5\frac{1}{4}$ to $6\frac{1}{4}$ to $3\frac{4}{5}$ in snout, greatly exceeds

front of interorbital; maxillary

1 to $1\frac{1}{5}$ in~~maxillary~~ $\frac{2}{3}$ eye; interorbital

2 in eye, deeply concave; opercle

with complete horizontal keel.

14 to 17 + 38 to 42; with fine transverse,

Rings ~~14 to 17 + 38 to 42~~ keels smooth.

Upper trunk keel and upper

caudal keel discontinuous; lower

trunk keel and lower caudal

keel continuous; median lateral

trunk keel descends behind

but not confluent with lower

caudal keel; median abdominal

or trunk keel distinct to vent.

Brood pouch on 18 caudal rings.

parallel striae

[D. 5354.] Cape Melville Light, N. 85°
E. 16.8 miles. January 1, 1909. ~~to examples~~
Length 60 mm.

³²²⁷
[D. 5365.] Cape Santiago Light, N. 73° W.
6.7 miles. February 22, 1909. Length 98 mm.

2991 [D. 5374.] Jayabat Light, N. 9° E. 7.4
miles, Marinduque Island. March 2, 1909.
Length 88 mm.

[D. 5376.] Jayabat Light, N. 53° W. 18.7
miles. March 2, 1909. 2 examples. Length
30 to 36 mm.

[D. 5382.] Arena Point, S. 55° W. 3.8 miles,
Luzon. March 6, 1909. 3 examples. Length
58 to 72 mm.

2947 [D. 5392.] Tubio Point, N. 49° E. 5 miles,
Destacado Island. March 13, 1909.

27 to 30,

or 7

1198

D. ~~27~~ on 6 caudal rings,
fin height ^{5 1/2 to 6 in total head} ~~5 1/2 to 6 in total head~~; A. rays
fin minute ^{to 16} ~~to 16~~; 6 to 7 in
pectoral rays 14, fin ~~to 16~~
head ^{3 7/8 to 4 in head.} ~~to 16~~
caudal ~~to 16~~

Dark brown. ^{in belly alternating dark}
brown and white bands, ^{latter little narrower}
irregular, on abdomen below.
and median on each ring and on lower side extend
under surface of head paler
below than above and on throat
dark or blackish brown median
streak joined by oblique bar
from eye posteriorly. Median
abdominal belt largely blackish
in some examples. ^{for gray.}
brown, Iris dark slate, dorsal
pale. Caudal blackish. Pectoral
largely pale, blackish basally.

half way in space above lower fin with belt to median lateral line.

[D. 5117.] Sombrero Island, S. 47° E. 10 miles.
January 21, 1908. 6 examples. Length 58 to 87 mm.

[D. 5121.] Malabrigo Light, N. 14° W. 9 miles,
east coast of Mindoro. February 2, 1908.
Length 74 mm.

[D. 5273.] Corogidor Light, N. 27° E. 27.25
miles, southern Luzon. July 14, 1908.
12 examples. Length 68 to 80 mm.

^{3239.}
[D. 5279.] Malavatuau Island, S. 18° W.
5.40 miles. July 27, 1908. Length 81 mm.

[D. 5292.] Escarceo Light, N. 36° W. 3.25
miles, southern Luzon. July 23, 1908.
2 examples. Length 70 to 77 mm.

[D. 5353.] Cape Melville Light, S. 85° E.
16.8 miles, Balabac Strait. January 1, 1909.
6 examples. Length 73 to 87 mm.

Red Sea, Zanzibar, Zambesi,
Natal, Madagascar, Seychelles,
India, Ceylon, Andamans,
Malacca, Singapore, East Indies,
Philippines, Indo China, China,
Melanesia, Micronesia, Polynesia.

Two examples. Buena Vista,¹²⁰⁰
Guimaras Island, Iloilo Strait.
January 14, 1909. Length 120 to 140
mm.

One example. Chase Head,
village near by, Endeavour
Strait, Palawan Island.
December 22, 1908. Length 93 mm.

Ten examples. Estero,
Sablayan Bay, Mindoro. December
13, 1908. Length 80 to 123 mm.

One example. Ragay River,
Ragay Gulf, Luzon. March 10, 1909.
Length 104 mm.

Eight examples. Limbe Island,
Celebes. November 12, 1909. Length
90 to 120 mm.

1201
U. S. N. M., No. 55621. Rio Grande
River, Mindanao. Dr. Morse.

October 1903. Length 138 mm.

Type of Corythoichthys pullus.

lavender tints. Iris dull yellowish
brown to ventral gray. Fins
brownish, dorsals and caudal little
deeper and spinous dorsal blackish
terminally.

Arabia, Natal, India, Philippines.

1702

Syngnathus penicillus Cantor

Syngnathus penicillus Cantor,
Journ. Asiatic Soc. Bengal, vol. 18,
p. 1368, 1849 (1850) (type locality,
Sea of Pinang).

— Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 172, 1870 (type). — Duméril,
Hist. Nat. Poiss., vol. 2, p. 549, 1870
(compiled). — Duncker, Mitteil.
Naturh. Mus. Hamburg, vol. 21, p.
188, 1903 (1904) (compiled).

Corythoichthys penicillus Bleeker,
Act. Soc. Sci. Ind. Néerl. (Enum.,
vol. 6, p. 186, 1859; Verslag. Adv.
wet. Amsterdam, vol. 12, p. 69,
1861 (Pinang)).

Body well compressed. Mouth moderate, protractile. Maxillary exposed, with supplemental bone. Jaws with villiform teeth and slightly enlarged conical teeth; bands of villiform teeth on vomer and palatines, tongue toothless. Preopercle and opercle entire, not armed with spines. Gill membranes separate. Gill rakers short, rather few. Pseudobranchiae present. Branchiostegals 6. Vertebrae 25, of which 15 caudal. Scales large, ciliated, spinulose. Lateral line in 2 sections; upper extends along back close to dorsal base - only reaching below last dorsal rays; lower section median on tail and reaches caudal; tubes straight, well exposed and form nearly continuous line.

Archiv naturges., vol. 19, pt. 1, p. 231, 1853 ⁽¹²⁰³⁾
~~Syngnathus argyrostictus Kämpf~~ (no description)

^{Kuhl and Van Hasselt}
Syngnathus argyrostictus, Kämpf, <
Cat. Lophobr. Fish Brit. Mus., p. 33,
1856 (type locality, Java). — Duméril,
Hist. nat. Poiss., vol. 2, p. 545, 1870
(compiled).

— Duncker, Spolia Zeylonica, vol. 7,
p. 32, 1910;

Mitteil. naturh. Mus.
¹⁹¹⁴
Hamburg, vol. 32, p. 84, (1915) (Port
Dickson; Java; Takao, Formosa; Fokien, China;
Japan; Tokyo).

— Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 4, p. 82, 1922
(compiled).

— Hora, Rec. Austral. Mus., vol. 27, pt.
6, p. 461, pl. 11, fig. 6, December 1925
(Inner backwater near Calcutta; Marmu-
you Bay, Portuguese India).

except pectoral which pale brown all with variable, scattered round brilliant white spots, all smaller than pupil. On last dorsal rays a large black white edged ocellus, large as eye. Ventral blackish like vertical fins and with small white spots.

Red Sea, Zanzibar, Natal, Madagascar, Seychelles, India, Ceylon, Andamans, East Indies, Philippines, China, Japan, Australia, East Australia, Melanesia, Micronesia, Polynesia. Quite variable, also color as well and minor structural variations frequent. Boulenger remarks "I have not been able to satisfy myself of the validity of the character pointed out by Vaillant for distinguishing P. nigricans

1204

Syngnathus biserialis (Gray) Kump,
Cat. Lophobr. Fish Brit. Mus., p. 33,
1856 (type locality, India).

Syngnathus spicifer (not Rüppell)
Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 172, 1870 (type of Syngnathus
biserialis "China").

Genus Plesiops Oken.

Plesiops Oken, Iris, 1817, p. 1182
(on Cuvier, Règne Animal, vol. 2, 1817,
p. 266, atypic). Type Plesiops
nigricans Rüppell, designated by
Bleeker, Arch. Néerl. Sci. Nat.
Haarlem, vol. 2, 1876, p. 322.

Pharopteryx Rüppell, Atlas Reise
nördl. Afr. Fische, 1828, p. 15. Type
Pharopteryx nigricans Rüppell,
monotypic.

Cirrhiptera (Kuhl and Van Hasselt)
Bleeker, Nat. Tijds. Ned. Indië, vol.
4, 1853, p. 280. Type Cirrhiptera
corallicola (~~Kuhl~~ Van Hasselt)
Bleeker, monotypic. (name in
synonymy.)

Corythoichthys quinquarius Snyder,
Proc. U. S. Nat. Mus., vol. 40, p. 526,
1911 (type locality, Kagoshima, Japan);
vol. 42, p. 408, 1912 (Tanegashima). —
Jordan, Tanaka, Snyder, Journ.
College Sci. Tokio, vol. 33, p. 97, 1913
(reference).

Depth $2\frac{4}{5}$; head $2\frac{1}{2}$, width 2. Snout $4\frac{1}{2}$ in head from snout tip; eye $4\frac{1}{8}$, equals snout, greater than interorbital; maxillary reaches slightly beyond eye, expansion $1\frac{3}{4}$ in eye, length 2 in head from snout tip; teeth in bands in jaws, inner upper larger and biserial along sides of mandible; small teeth on vomer and palatines; pair of canines in front of each jaw; interorbital $6\frac{1}{5}$, slightly convex; hind preopercle edge serrate with 2 serrae at angle little larger; opercle with upper spine more distant from median than lower, also most forward. Gill rakers 8 + 16, lanceolate, equal gill filaments or 2 in eye; 4 upper and 4 lower rudimentary.

Scales 93 along lateral line to caudal base; tubes 60 in lateral line to

Depth 19; head $7\frac{2}{3}$, width $3\frac{1}{2}$.
 Snout $1\frac{4}{5}$ in head from snout tip;
 eye 7, $3\frac{4}{5}$ in snout, greatly exceeds
 interorbital; maxillary equals eye;
 interorbital $1\frac{2}{3}$ in eye, concave;
 opercle with horizontal keel, at
 least $\frac{3}{4}$ its extent.

Rings 16 + 38. Upper trunk
 keel and upper caudal keel
 discontinuous, overlap first 5
 caudal rings along dorsal fin
 base; lower trunk keel and
 lower caudal keel continuous;
 lateral trunk keel ends at tail,
 discontinuous; median or ventral
 keel of abdomen distinct. Caudal
 broad pouch extends over first

²⁰¹¹
 1 [D. 5502.] Macabalan Point Light,
 S. 35° E. 8.2 miles. August 4, 1909.

5 examples. Length 64 to 128 mm.

3158 [D. 5503.] Macabalan Point Light,
 S. 31° E. 6.6 miles. August 4, 1909.

3 examples. Length 57 to 129 mm.

3749 and 3751 [D. 5504.] Macabalan
 Point Light, S. 39° E. 6 miles. August 5,
 1909. Length 58 to 124 mm.

^{1398,}
 1399 and 1400 [D. 5505.] Macabalan
 Point Light, S. 31° E. 7.7 miles. August 5,
 1909. Length ¹⁵14 to 128 mm.

[D. 5516.] Point Tagolo Light,
 S. 80° W. 9.7 miles, Mindanao. August
 9, 1909. 16 examples. Length 67 to 100 mm.

11 caudal rings.

D. 28, fin on first 6 caudal rings; fin height 4 in total head; ^{ray} A. 4; caudal 4 in head, convex behind; pectoral rays 17, fin length 5 in total head.

Brown above, under surface of head and belly paler. When fresh sides with minute pearly ocelli, center of each dark dot. Back and tail mottled with darker and pale. Snout above, chin and throat white. Iris slate. Broad dark brown band from snout to eye and continues over postocular. Several rows of minute dark or dusky dots.

1928 [D. 5417.] Lavis Point Light, N. 10°
E. 3.5 miles. March 25, 1909. Length 66 mm.

[D. 5418.] Lavis Point Light, N. 16° E. 5.6
miles. March 25, 1909. 2 examples.
Length 67 to 69 mm.

²⁹⁸³
[D. 5419.] Lavis Point Light, N. 27° E.
17.8 miles. March 25, 1909. Length 62 mm.

4313 [D. 5420.] Cruz Point, S. 20° E. 6
miles, Bohol Island. March 25, 1909.
Length 81 mm.

^{4051,}
⁴⁰⁶³ [D. 5453.] Legaspi Light, S. 58° W.
4.5 miles, Luzon. June 7, 1909. Length ⁶⁷⁵
₁ 64 mm.

[D. 5501.] Macabalan Point Light, S.
 35° E. 8.2 miles, Mindanao. August 4,
1909. 8 examples. Length 60 to 70 mm.

on lower side of muzzle. A dark brown median streak, on under surface of head from behind chin. Edge of brood pouch in male with white, dark edged bars. Dorsal dull uniform brownish. Caudal blackish, edged with white. Pectoral brownish.

India, Pinang, East Indies, Formosa, China, Japan.

U. S. N. M., no. 68227. Tanegashima, Japan.

Length 123 mm. Type of Corythoichthys quincarinus.

Length 71 mm.

[D. 5393.] Pangasinan Point, S. 59° E.
14.8 miles, Talajit Island. March 13, 1909.
11 examples. Length 59 to 107 mm.

2342 [D. 5396.] Panalangan Point,
S. 78° E, 4.5 miles, Talajit Island.
March 15, 1909. Length 76 mm.

2074 [D. 5397.] Panalangan Point,
S. 78° E. 6 miles. March 15, 1909.
Length 79 mm.

2842 and 2843 [D. 5403.] Capitanillo
Island Light, S. 46° W. 15.7 miles.
March 16, 1909. Length 105 to 135 mm.

[D. 5412.] Lavis Point Light, N. 21° E. 5.5
miles. March 23, 1909. Length 96 mm.

[D. 5416.] Lavis Point Light, N. 12° E., 2.9
miles (10° 11' 30" N., 123° 53' 30" E.), between
Cebu and Bohol. In 150 fathoms. March 25, 1909. Length 108 mm.

1208a

Syngnathus
~~Micragnathus~~ nitidus Günther

Syngnathus nitidus Günther, Journ.
Mus. Godeffroy, vol. 1, p. 103 (1873), 1873
(type locality, Bowen, Queensland).

↑ — Duncker, Fauna Südwest-Austral. Michaudsen
and Hartmeyer, vol. 2, pt. 1, p. 243, 1909
(Australia)
(copied)

vol. 32, p. 76, 1914 (1915) (copied).

— McCulloch, Mem. Austral. Mus.,
vol. 5, pt. 1, p. 88, June 29, 1929
(reference).

1208a

Syngnathus
~~Micrognathus~~ nitidus Günther

Syngnathus nitidus Günther, Journ.
Mus. Godeffroy, vol. 1, p. 103 (175), 1873
(type locality, Bowen, Queensland).
→ — McCulloch and Whitley, Mem. Queensland Mus.,
vol. 8, pt. 2, p. 537, July 7, 1925 (reference).
Micrognathus nitidus Duncker,
Mitteil. Naturh. Mus. Hamburg,
vol. 32, p. 76, 1914 (1915) (copied).
— McCulloch, Mem. Austral. Mus.,
vol. 5, pt. 1, p. 88, June 27, 1929
(reference).

paired or last 2 or 3 may fork or divide below; body mottled and spotted as well as banded; pectoral pale.

fasciatus
h.² Vertical bands 5 or 6, not inclined.

l.¹ Brown, with or without small darker spots; fins uniform, dark terminally; often dark, oblique streaks on cheeks. diacanthus

l.² Brown, transverse dark bands variably broken below lateral line into spots; oblique dark streaks from eye to cheek and opercle. brunneus

l.³ Brown or olive, with yellowish round spots and 5 or 6 black vertical bands which may be paired; dorsal and caudal with round black spots; pectoral yellowish; ventral blackish terminally.

sexfasciatus

12086

Tail twice longer than trunk, without head. Head short. Snout very short, arched, long as postorbital, median keel above with 2 spines; orbital edge well protruded; interorbital concave; opercle with keel.

Rings $14+31$; not deeper than wide, with strong keels each ending in spine at articulation; median lateral trunk keel continuous with upper caudal keel.

D. 18, on 1 trunk and 5 caudal rings, base not elevated; caudal very short.

Two white cross bands on head. Snout white, with numerous dark brown rings. Rings brown, sutures with whitish streak, 3 of trunk rings paler. Length 68 mm (Günther.)
Queensland.

1209

Syngnathus cyanospilus Bleeker

Syngnathus cyanospilus Bleeker,
Act. Soc. Sci. Ind. Néerl., vol. 6, p.
80, 114, 1854 (type locality, Banda,
Nira); Act. Soc. Sci. Ind. Néerl.
Sumatra), vol. 7, p. 72, 1857
Banda.

Syngnathus cyanospilus Günther,
Cat. Fish. Brit. Mus., vol. 7, p.
170, 1870 (Zanzibar, East Indies,
p. 515 (Gulf ofuez). — Cuvier,
Hist. Nat. Poiss., vol. 2, p. 555,
1870 compiled. — Day, Fishes of
India, pt. 4, p. 678, 1872; Fauna
of British India, Fishes, vol. 2,
p. 463, 1889. — Weber, Siboga Exped.,
vol. 57, Fische, p. 107, 1913 (Nauru).
— Duncker, Mitteil. Naturh. Mus.

Pharopteryx melas Jordan and Seale,
 Proc. U. S. Nat. Mus., vol. 28, 1905, p.
 781 (Regrex); Bull. Bur. Fisher., vol.
 25, 1905 (1906), p. 261, pl. 38, fig. 3 (Apia
 and Pago Pago). — Ogilby, Mem. Queensland
 Mus., vol. 2, 1913, p. 84 (Easthead Island).

Plesiops woodlarkensis Thollière,
 Fauna Woodlark, 1857, p. 160. Woodlark
 Island.

Plesiops nigricans var. apoda Kner,
 Sitzungsber. Akad. Wiss. Wien, vol. 57, pt.
 1, 1868, p. 346. Savay, Samoa; Kandavu.

Plesiops nakaharae Tanaka, Zool. Mag. ^{Japan?},
 vol. 29, no. 345, July 15, 1917, p. 199.

Province Ise (probably off Province Shima
 or Kii).

Pharopteryx nakaharae Tanaka, Fig.
 Descript. Fisher Japan, vol. 28, November
 28, 1918, p. 497, pl. 137, fig. 383 (type).

Hamburg, vol. 32, p. 81, 1914 (1915)

Indo-Pacific; East Africa;
Philippines; Formosa. —

↑ — Weber and Beaufort, Fish. Indo Austral.
Archip., vol. 4, p. 83, 1922 (Singapore;
Nias; Siam). — Barnard, Ann. South Afric. Mus.,
vol. 21, pt. 1, p. 290, June 1925 (Mozambique).

Syngnathus mossambicus Peters,
Archiv naturges., vol. 21, pt. 1,
p. 277, 1855 (type locality,
Lumbo, Mozambique); Ber. Verh.
Kon. Preuss. Akad. Wiss. Berlin,
p. 465, 1855, Flussfische

Mozambique, p. 104, pl. 20, fig.
3, 1868. — Duméril, Hist. nat.
Poiss., vol. 2, p. 565, 1870 (compiled).
Günther, Fishes of Zanzibar, p. 140,
1866 (Zanzibar). — Peters,

Hamburg, vol. 32, p. 81, 1914 (1915)

Indo-Pacific; East Africa;

Philippines; Formosa, —

→ Chevey, Inst. Océan. Indo Chine,
17^e Note, p. 18, August 25, 1932

(Gulf of Siam)

Syngnatus cyanospilus Fatjew and Leuz. Abhand.
Lipschenberg. Naturf. Gesell., vol. 41, p. 529, 1897 (Zanzibar).

Syngnathus mossambicus Peters,

Archiv naturges., vol. 21, pt. 1,

p. 277, 1855 (type locality,

Lumbo, Mozambique); Ber. Verh.

Kon. Preuss. Akad. Wiss. Berlin,

p. 465, 1855, Flussfische

Mozambique, p. 104, pl. 20, fig.

3, 1868. — Duméril, Hist. nat.

Poiss., vol. 2, p. 565, 1870 (compiled).

Günther, Fishes of Zanzibar, p. 140,

1866 (Zanzibar). — Peters,

~~Stigmatophora nigra~~ Kaup.

→ Philippines
Chevey, Ins
17^e Note, p. 1
Gulf of H.
Syngnatus Cyanus
Vandenberg, Anturf,
Syngnathus

Pharyopteryx corallicola Fowler, Journ.
 Acad. Nat. Sci. Phila., ser. 2, vol. 12, 1904,
 p. 530 (Padang); Proc. Acad. Nat.
 Sci. Phila., 1907, p. 268 (Padang material);
 Copeia, no. 58, June 18, 1918, p. 63
 (Philippines); Proc. Acad. Nat. Sci.
 Phila., 1927, p. 275 (Philippines).

Plesiops melas Bleeker, Verh. Batav.
 Genootsch. (Bali), vol. 22, 1849, p. 9.

Boleling, North Bali. — Jordan and
Richardson, Bull. Bur. Fisher., vol. 27,
 1907 (1908), p. 257 (Calayan). — Snyder,
 Proc. U. S. Nat. Mus., vol. 42, 1912, p. 498
 (Alkinawa). — Weber, Siboga Exped., vol. 65,
 1913, p. 213 (Sumba, Seba, Beo, Lirung,
 Atjatuning, Kubaena, Saleyer, Tuir,
 Timor, Rotti). — Beaufort, Bijdr. Dierk.,
 Amsterdam, 1913, p. 112 (Saonek, Waigiu).

— Regan, Proc. Zool. Soc. London, 1909, pt. 1,
 p. 403 (Christmas Island, Indian Ocean).

Archiv. Naturg.; vol. 17, pt. 1, p. 232, 1853 (no description).
Syngnathus kühlii Kaup, Cat. Lophobr. Fish Brit. Mus., p. 34, 1856 (type locality; "Leyden and Paris Museums"). — Cuvérill, Hist. Nat. Poiss., vol. 2, p. 555, 1870 (Java). 12/11

Syngnathus variegatus (Kuhl and Van Hasselt) Kaup, Cat. Lophobr.

Fish Brit. Mus., p. 34, 1856

(name in synonymy).

Archiv. Naturg., vol. 17, pt. 1, p. 232, 1853

(name in synonymy; no description).

Plesiops caeruleo-lineatus Günther,
Cat. Fishes Brit. Mus., vol. 3, 1861, p. 363
(Australia).

Plesiops corallicola (Kuhl) Rüppell, Neue
Wibelth., Fische, 1835, p. 5. Java Sea. —
Bleeker, ~~Natuurk.~~ Tijds. Ned. Indië, vol.
4, 1853, p. 282 (Priaman). — Günther,
Cat. Fishes Brit. Mus., vol. 3, 1861, p. 364
(Moluccas, Amboyna, Fiji, Tonga, China).
— Kner, Reise Novara, Zool., vol. 1, pt. 2,
1865, p. 214 (Madras). — Günther, Journ.
Mus. Godeffroy, vols. 2-3, pts. 5-6, 1874,
p. 87, pl. 58, fig. B (East Indies, Samoa,
Tonga, Fiji, Pelew and Kingmill Islands).
— Vaillant, Bull. Soc. Philomath. Paris,
ser. 8, vol. 1, 1889, p. 58 (no locality).

Cirrhiptera corallicola (Van Hasselt)
Bleeker, Nat. Tijds. Ned. Indië, vol. 4,
1853, p. 281 (name in synonymy).

Doryichthys spaniaspis Jordan and
Seale, Bull. Bur. Fisher., vol. 26,
p. 10, fig. 3, 1906 (type locality,
Cavite).

Syngnathus macrophthalmus
Linckow, Mitteil. naturh. Mus.
Hamburg, vol. 32, p. 85, 1914 (1915)
(type locality, Suez).

Over 129

230

Lethrinus curatulus Valenciennes

Lethrinus curatulus Valenciennes, Hist. nat. Poiss., vol. 6, 1830, p. 301. Verrill. $\frac{1}{m}$.
Sauvage, Hist. nat. Madagascar, Poiss., 1871, p. 202, pl. 21, fig. 3 (type).

Depth $2\frac{4}{5}$; head $2\frac{4}{5}$, upper profile little convex just before eye. Snout $1\frac{4}{5}$ in head; eye $3\frac{1}{8}$, $2\frac{1}{8}$ in snout, maxillary reaches $\frac{3}{4}$ to eye, length $2\frac{4}{5}$ in eye; teeth as 4 moderate canines apparently in front of each jaw as shown on figure followed by 4 or 5 similar conic teeth; molars somewhat stronger above than below; interorbital low, little convex, greater than eye.

Scales 54 in lateral line to caudal base on figure; 6 above, 16 below; preopercular scales extend forward opposite hind eye edge.

D. X, 9, third spine $3\frac{1}{8}$ in head,

1213

Depth 30 to 35; head $7\frac{3}{4}$ to $8\frac{1}{2}$,
width $4\frac{1}{4}$ to $4\frac{1}{2}$. Snout $1\frac{7}{8}$ to 2 in
head from snout tip; eye 5 to 6,
 $2\frac{1}{2}$ to 3 in snout, greater than
interorbital; maxillary $1\frac{1}{4}$ in
eye; interorbital $1\frac{1}{4}$, concave; ✓

opercle with conspicuous longitudinal
complete keels, no radiating lines
below.

~~case 2 curved rays, ...~~
with upper caudal keel which
begins on penultimate trunk
ring; median lateral trunk
keel deflected on last trunk ring
but not coalescing with lower
caudal keel; lower trunk and
caudal keels continuous, occipital
medial keel from behind eyes
to second or third trunk ring.

D. 21 to 23, on 1 trunk and 5
caudal rings, height 2 in snout;
caudal $2\frac{3}{4}$ to $3\frac{1}{5}$ in total head

Depth 30 to 35; head $7\frac{3}{4}$ to $8\frac{1}{2}$, width $4\frac{1}{4}$ to $4\frac{1}{2}$. Snout $1\frac{7}{8}$ to 2 in head from snout tip; eye 5 to 6, $2\frac{1}{2}$ to 3 in snout, greater than interorbital; maxillary $1\frac{1}{4}$ in eye; interorbital $1\frac{1}{4}$, concave; ✓

Rings 13 or 14 + 3 2 to 35; transversely striated. Keels smooth; upper trunk keel reaches over last 2 trunk rings, discontinuous with upper caudal keel which begins on penultimate trunk ring; median lateral trunk keel deflected on last trunk ring but not coalescing with lower caudal keel; lower trunk and caudal keels continuous, occipital medial keel from behind eyes to second or third trunk ring.

D. 21 to 23, on 1 trunk and 5 caudal rings, height 2 in snout; caudal $2\frac{3}{4}$ to $3\frac{1}{5}$ in total head

length; anal minute; pectoral $4\frac{1}{4}$ to 5, rays 12 to 14.

Brown, little paler to whitish below. In young colors more contrasted with about $4\frac{1}{2}$ to 6 dark broad transverse bands on trunk and 6 to 8 on tail. At articulations of rings close above lower trunk caudal keel whitish spot and often at under surface of front of tail blackish brown white spots in strong contrast. Intermediate pale narrow, or even whitish, areas between dark transverse bands often with dark brown bordering lines which form still greater contrast. Fins all pale.

Gulf of Suez, Zanzibar, Mozambique, Madagascar, India, Singapore, East Indies, Siam, Philippines, Formosa.

1215
Most of the specimens of this
species show a large blackish
area about the vent.

Syngnathus uncinatus Weber

Syngnathus uncinatus Weber, Siboga
Exped., vol. 57, Fische, p. 110, fig. 36,
1913 (type locality, Riff, Banda).
— Duncker, Mitteil. Naturh. Mus.
Hamburg, vol. 32, p. 86, 1914 (1915)
(copied). — Weber and Beaufort,
Fishes Indo Austral. Archipel.,
vol. 4, p. 84, fig. 35, 1922 (type).

— Hora, Records Indian Mus., vol. 27,
pt. 6, p. 460, text fig. 4 (head), December
1925 (Octavia Bay, Ankauri Harbor).

21436, 22025 to 22027. Panpan Point,
Tara Island, between Jolo and Tawi
Tawi. September 20, 1909. Length 86
to 122 mm. 5 examples.

4 examples. Port Banalacan,
Marinduque Island. February 23, 1909.
Length 53 to 97 mm.

6941 to 6943, 6944, 7410 to 7413, 22697,
22698. Port Galera, Mindoro. June 9,
1908. Length 72 to 102 mm.

73 examples. Port Galera. October 27, 1909. Length 45 to 108 mm.
10307. Port Maricaban. July 21, 1908.

Length 35 to 72 mm. 4 examples.

8351, 18179 to 18183. Port San Pio
Quinto, Camiguin Island. November 11,
1908. Length 80 to 128 mm.

14973 to 14975 [1257 to 1259], 17491 to
17496, 17510. Refugio Island, Pasacao,
Luzon. March 9, 1909. Length 86 to 108 mm.

22501. Sablayan, Mindoro. December
12, 1908. Length ^{119 to} 100 mm. 3 examples.

Depth $28\frac{3}{4}$; head $8\frac{1}{2}$, 3 to vent.

Snout 2 in head, subcylindrical, upper profile obliquely continued in upper hind profile of head; median denticulated keel on hind half of snout to occiput and nape; eye $6\frac{1}{2}$ in head, 3 in snout; serrated supraorbital keels begin before nostrils and end at occiput, similar keels laterally on snout; opercle with complete serrated longitudinal keel, with radiating pennatifid edges.

Rings 15 + 42; transversely striated, edges strongly prominent, finely and very sharply serrated, ending in hindward curved spine; intermedial shields absent. Upper trunk keel ends near end of dorsal; upper caudal keel deflected anteriorly, extending forward to last trunk ring above ends of median lateral

1218

trunk keel; lower trunk and caudal keels continuous. Subdorsal rings inflated. Tail over $2\frac{1}{2}$ times trunk.

D. 28, on 1 trunk and 7 caudal rings, base of fin little elevated; caudal rounded, $3\frac{7}{8}$ in head; pectoral 7, rays 15.

Yellowish, ventral part of trunk brown, also longitudinal patch below dorsal and lateral part of tail, which with 6 light cross bars, hindwards diminishing in width. Length 60 mm.

(Weber and Beaufort.)

Banda, East Indies. One specimen known.

Syngnathus analicarens Duncker

Syngnathus analicarens Duncker,
Mitteil. Naturh. Mus. Hamburg,
vol. 32, p. 83, 1914 (1915) type.
locality, Persian Gulf;
Baluchistan; Mebran coast.

from P. corallicola, as the material before me show it to be not even constant on the same individual. Prof. Vaillant was probably deceived by examining isolated detached scales of the two supposed species. We fail likewise to find anything tangible to separate P. nakaharae and P. semion. The nominal P. oxycephalus Bleeker, from the East Indies, is not represented in our series of examples. According to Boulenger it is much more slender (or the depth $3\frac{2}{3}$ to $3\frac{3}{4}$ in its total length), without an opercular ocellus and the caudal with a crescentic orange band.

Rings 16 or 17 + 38 to 40; smooth.
Keels more distinct in male. Opercle
with distinct longitudinal keel.

D. 28 to 32, short, about equals
postorbital, on 1 trunk and 6 or 7
caudal rings; caudal rays 10,
rather small; pectoral rays 13
to 15.

Clear brown, with dark cross
bands. Lower lateral trunk keels
with milk white spot at middle
of ring. Abdominal keel of male
dark brown. Dorsal obscurely
pigmented. Length 140 mm.
(Bennett.)

Persian Gulf, Beluchistan,
Mekran.

Syngnathus coquerelii Duméril

Syngnathus coquerelii Duméril,
Hist. nat. Poiss., vol. 2, p. 375, 1870
type locality, Madagascar. —
Sauvage, Hist. nat. Madagascar,
Poiss., p. 505, pl. 50, fig. 3, 1891
(Madagascar⁴; "Mer des Indes").

Depth $19\frac{1}{5}$; head $6\frac{1}{4}$ ($7\frac{1}{2}$ in
total in description). Snout 2 in
head from snout tip; eye 6, $3\frac{1}{5}$
in snout; distinct rostral beel
not continued beyond eyes;
interorbital flat; opercle with
basal beel (not shown on figure).

Rings 17 or 18 + 32 or 33;
upper trunk and caudal beels
apparently on figure discontinuous;
lower trunk and caudal beels
continuous; ventral trunk beel

Depth $2\frac{1}{3}$ to $2\frac{1}{2}$; head $2\frac{4}{5}$ to 3, width $1\frac{7}{8}$ to 2. Snout 5 in head from snout tip; eye $2\frac{4}{5}$ to $3\frac{1}{2}$, greater than snout or interorbital; maxillary reaches $\frac{1}{2}$ to $\frac{3}{5}$ in eye, expansion $1\frac{2}{3}$ to 2 in eye, length 2 to $2\frac{1}{4}$ in head from snout tip; teeth villiform, in bands in jaws, on vomer and palatines; interorbital 4 to $4\frac{1}{4}$, slightly convex; preopercle edge entire. Gill rakers 5 + 9, lanceolate, some short and clavate, length $2\frac{4}{5}$ in eye. Scales 19 or 20 in lateral line in upper section, 8 or 9 in lower section to caudal base and 3 more on latter, 3 scales above, 12 below, 11 predorsal to occiput, 3 rows on cheek to preopercle flange; 3 rows of scales along dorsals and anals and caudal base scaled; maxillary

prominent.

D. 33, on 3 trunk and 5 caudal rings; A. rays 4; caudal 6, fin 4 in head; pectoral $5\frac{1}{4}$, rays 15.

Yellowish brown, sutures of rings darker. Broad silvery band on flank and side of tail. Length 127 mm. (Sauvage.)

Madagascar.

1112

One example. Bulan Island
tide pool. July 22, 1909. Length 40
mm.

Two examples. Canimo Pass near
Daet Point, Luzon. June 15, 1909.
Length 51 to 55 mm. Type and paratype:
male with brood pouch filled with ova.

One example. Cebu, reef opposite.
April 7, 1908. Length 32 mm.

One example. Tomahu Island tide
pools, Bouro Island. December 11, 1909.
Length 47 mm.

One example. Great Lobe Island
tide pools, Buton Strait. December
15, 1909. Length 49 mm.

One example. Basa Island, Gulf
of Boni, Celebes, in tide pools.
December 17, 1909. Length 45 mm.

~~Three examples. Makassar Island
tide pools, Celebes. December 16, 1909.
Length 74 to 78 mm.~~

Syngnathus microlepturus

Syngnathus
micrognathus balli (Fowler)

1221f

Corythoichthys balli Fowler, Bishop
Mus. Bull., no. 22, p. 24, 1925 (type
locality, Waikiki Reef, Honolulu).

Micrognathus balli Fowler, Mem.
Bishop Mus., vol. 10, p. 114, fig. 25,
1928 (type).

Corythoichthys mataafae (not Jordan
and Seale) Fowler, Occas. Pap.
Bishop Mus., vol. 8, no. 7, p. 375,
1923 (Waikiki, Oahu).

Biol. Ceylon, 1912-13, pt. 4, p. 213
(Cheval Paar Group, between Cheval
Paar and Muttuvaratu; between
Talavella and Chilaw).

Serranus lineatus Valenciennes, Hist.
Nat. Poiss., vol. 2, 1828, p. 312. Pondicherry.
— Günther, Cat. Fishes Brit. Mus.,
vol. 1, 1859, p. 156 (China); Cruise of
Curacao, Brechley, 1873, p. 410 (Mol.
Moluccas). — Elera, Cat. Fauna Filip.,
vol. 1, 1895, p. 463 (Luzon, Cavite, Santa
Cruz).

Serranus amboinensis Bleeker, Nat.
 Tijds. Ned. Indië, vol. 3, 1852, p. 258
Amboina. — Günther, Cat. Fishes Brit.
Mus., vol. 1, 1859, p. 156 (Ceylon)

12219

Depth 15; head $7\frac{1}{3}$, width $2\frac{3}{4}$.

Snout $2\frac{1}{2}$ in head from snout tip; eye 5, 2 in snout; interorbital level; opercle convex, with slight median anterior horizontal keel.

Rings 17+32; with fine striae, not greatly developed. Keels slight; upper trunk keel interrupted opposite hind part of dorsal fin, not continuous with upper caudal keel; median lateral trunk keel discontinuous at tail; lower trunk and caudal keels continuous. Brood pouch over first 12 caudal rings.

D, 23, on 3 trunk and 4 caudal rings, fin height $4\frac{1}{5}$ in head; A. rays 2?; caudal small; pectoral $3\frac{3}{4}$ in head, rays 12.

Pale brown, evidently greatly faded. Head and trunk above

with obscure brownish marblings.^{12th}
On upper surface of back and
tail 10 narrow dusky cross
bars, less conspicuous on sides.
Under surface of head posteriorly
and each ring on belly with
smutty brown cross band over
anterior portion at least, becoming
paler posteriorly on trunk. Fins
transparent.

Hawaii. Described above from
the type of Corythoichthys balli.
This species is evidently neither
a member of Corythoichthys
or Micrognathus.

B. P. Bishop Museum, No. 3414.
Waikiki reef, Honolulu. March
13, 1924. C. H. Edmondson and
S. C. Ball. Length 62 mm. Type of
Corythoichthys balli.

Nyngnathus modestus (Bünther)

1222

Nyngnathus modestus (Bünther, Zool.
Fisch. Brit. Mus., vol. 2, p. 100, 1870
type locality, : New Hebrides; ? (Ant
America); Journ. Mus. G. Jeffry,
vol. 1, p. 421, 1910 (Ducitum.
Luncker, Fauna Vich. Austral.
Michaelson and Hartmeyer, vol. 2,
p. 246, 1907 (compiled); Mitteil.
Naturh. Mus. Hamburg, vol. 52,
p. 86, 1914 (1915) (compiled). —
Fowler, Mem. Bishop Mus., vol. 10,
p. 110, 1921 (compiled).

Head 8 in total; tail twice
long as trunk. Snout 2 in
head; supraciliary edge
continued into short ridge
behind; distinct median ridge

lines all variable and not quite the same on both sides of the same specimen. They are especially broken or variously disconnected in head. Faint uniformly pale brown.

Red Sea, Zanzibar, Natal, Madagascar, Mauritius, Seychelles, Ceylon, Andamans, East Indies, Philippines, Formosa, Japan, Australia, Melanesia, Micronesia, Polynesia. According to Bleeker the white longitudinal bands are 3 or 4 in the very young.

on nuchal shields; front part of opercle with faint ridge.

Rings $17 + 31$; without spines. Body deeper than broad. Keels prominent. Brood pouch on tail, half long as tail.

D. 22, begins on front suture of anal ring; caudal fin well developed.

Body without distinct markings. Lower side of snout with brownish fasciolae. Length 140 mm.
(Günther.)

Melanesia.

1224

Syngnathus maxweberi Whitley

Syngnathus maxweberi Whitley, Rec.
Australian Mus., vol. 19, no. 1, p. 66,
August 2, 1933 (on Weber).

Syngnathus punctatus (not Rafinesque)
Weber, Siboga Exped., vol. 57, Fische,
p. 113, fig. 37, 1913 (type locality,
Saleh Bay, Sumbawa). — Weber
and Beaufort, Fishes Indo Austral.
Archip., vol. 4, p. 86, fig. 36, 1922.

1474

[768]. Sablayan, Mindoro. December 13,
1908. Length 62 mm.

56264, U. S. N. M. Bucon, Philippines.
Bureau of Fisheries (3750). Length
75 mm.

32727, U. S. N. M. Indian Archipelago.
Leiden Museum. Length 150 mm.

52392 U. S. N. M. Apia, Samoa.
Bureau of Fisheries. Length 118 mm.

1225

Depth $18 \frac{2}{3}$; head $6 \frac{1}{2}$. Snout $1 \frac{2}{3}$ in head, cylindrical, upper profile concave, low median keel on hind half ends in interorbital; eye 6, in head, $3 \frac{1}{2}$ in snout; interorbital narrowly concave; top of head corrugated with indication of median keel and more conspicuous one on nape and behind eyes; opercle with short keel, somewhat curved upward with numerous radiating lines and series of points.

Rings $15 + 20$; transversely striated and corrugated, prominent edges smooth. Intermedial shields oval, very conspicuous. Upper trunk keel ends at middle of dorsal, not continuous with upper caudal keel, ~~which~~ deflected anteriorly and ends on first caudal ring near end of median lateral trunk ring; lower trunk and caudal

beels continuous; median ventral beel conspicuous. Tail somewhat less than twice trunk.

D. 23, on 1 trunk and 5 caudal rings, base of fin not elevated; anal and caudal very small; pectoral $4 \frac{3}{4}$ in head, rays 16.

Yellowish, with faint brown marmoration. Length 79 mm.

(Weber and Beaufort.)

East Indies. One specimen known.

Syngnathus pelagicus Linnaeus

Syngnathus pelagicus Linnaeus,
Syst. Nat., ed. 10, pt. 1, p. 337, 1758
(type locality, "In Fucus natante"). —

Forskål, Descript. Animal., p. xvii,
1775 (Arabia). — Bloch, Naturg.
Aust. Fische, vol. 1, p. 5, pl. 107, fig. 4
(Cape of Good Hope). — Bonnaterre,
Tabl. Ichth., p. 31, pl. 21, fig. 2 (Pacific).
→ 1788 (L.)

↑ — Gmelin, Syst. Nat. Linn., p. 1455,
1788 (Cape of Good Hope). — Walbaum,
Artedi Pisc., vol. 3, p. 5, 1792 (copied).
— Lacépède, Hist. Nat. Poiss., vol. 2,
p. 39, 1800 (copied). — Schneider, Syst.
Ichth. Bloch, 1801, p. 515 (copied).
reference). — Günther, Ann.
The Réunion, vol. 2, p. 30, 1862. —
Steindachner, ~~Steindachner~~ Sitzb. Ber.

Syngnathus pelagicus Linnaeus

Syngnathus pelagicus Linnaeus,
Syst. Nat., ed. 10, pt. 1, p. 307, 1758
type locality, "In Fuceo natante". —

Forskål, Descript. Animal., p. xvii,
1775 (Arabia). — Bloch, Naturg.
Aust. Fische, vol. 1, p. 5, pl. 107, fig. 4
(Cape of Good Hope). — Bonnaterre,
Tabl. Ichth., p. 31, pl. 21, fig. 2^a (Pacific).
1788

→ — Bleeker, Verh. Batavia. Genoot.
sch. (Fisch.), vol. 25, p. 19, 1853 (Atlantic
Ocean). — Kaup, Cat. Lophobr. Fish
Brit. Mus., p. 36, 1856 (Cape of Good
Hope). — Bleeker, Nat. Tijds. Ned.
Indië, vol. 21, p. (51) 56, 1860
(reference). — Guichenot, Notes

Ile Réunion, vol. 2, p. 30, 1862. —
Steindachner, ~~Steindachner~~ Sitzb. Ber.

Forsk., Descript. Animal
1775 (Arabia). — Bloch,
Anal. Fische, vol. 1, p. 5, pl. 1
(Cape of Good Hope). — B.
Tabl. Ichth., p. 31, pl. 21, fig. 2.

→ — Bleeker, Verh. Batavia
Trak., vol. 25, p. 19, 1851

(near Hong Kong). — Kaup, Nat. Lophoc
Brit. Mus., p. 36, 1856

(Cape of Good Hope). — Bleeker, Nat. Tijdschr.
Ned. Ind., vol. 21, p. (51) 56, 1856

(reference). — Guichenot

Ile Réunion, vol. 2, p. 50.

Steindachner, Steindachner Sitzg.

on the west coast of
length 128 mm. Amboina
A. N. S. P., vol. 60, 1899

Depth $2\frac{3}{5}$ to $3\frac{1}{8}$; head $2\frac{1}{4}$ to $2\frac{3}{4}$, width $1\frac{7}{8}$ to $2\frac{1}{5}$. Snout $4\frac{1}{2}$ in head from snout tip; eye 4 to 5, 1 to $1\frac{1}{4}$ in snout, greater than interorbital in young to $1\frac{1}{8}$ in interorbital with age; maxillary reaches $\frac{4}{5}$ in eye in young to little beyond eye with age, expansion $1\frac{1}{5}$ to $1\frac{1}{4}$ in eye, length 2 in head from snout tip; teeth fine, in bands in jaws, on vomer and palatines, none on tongue; interorbital $5\frac{1}{4}$ to $7\frac{1}{2}$, little convex; preopercle edge with 3 rather large spines; 3 opercular spines equidistant. Gill rakers 7 + 14, lanceolate, longest half of gill filaments or $2\frac{1}{4}$ in eye; 5 above and 7 below rudimentary.

Scales 59 in lateral line to caudal base and 7 more on latter,

- Abhandl. Wiss. Wien, Math.-naturw.
 Kl., vol. , pt. 1, p. , 1867 Hong
 Kong; Ningpo. — Günther, Cat.
 Fish. Brit. Mus., vol. 8, p. 165,
 1870 Mediterranean; Atlantic;
 New Zealand; South Australia;
 China; Mauritius. — Quoy,
 Hist. nat. Poiss., vol. 2, p. 566, 1870
 (Brazil, Martinique, Cape of Good
 Hope, Reunion, Malacca, Australia).
 — Macleay, Proc. Linn. Soc. New South
 Wales, vol. 6, ^{pt. 2} p. 288, 1882 (compiled).
 — Gilchrist, Marine Investig. South
 Africa, no. 6, p. 156, 1901 (reference).
 — Chu, Biol. Bull. St. John's Univ.,
 no. 1, p. 97, January 1931 (reference).

1470

Labrax orientalis Steindachner, Monz.
Abhand. Wiss. Wien, vol. 32, no. 24-25,
November 21, 1895, p. 259 (Fisch.).

Sciæna vittata Lacépède, Hist. Nat.
Poiss., vol. 4, 1802, pp. 310, 316. Manuscript.

Perca triacantha Lacépède, Hist. Nat.
Poiss., vol. 4, 1802, pp. 398, 424. "collection
cédée à la France par la Hollande."

Perca pentacantha Lacépède, Hist.
Nat. Poiss., vol. 4, 1802, pp. 398, 424.
"collection cédée à la France par la
Hollande."

— Weber and Beaufort, Fish. Indo.
Austral. Archip., vol. 4, p. 87, 1922
(reference). — Barnard, Ann.
South Afric. Mus., vol. 21, pt. 1, p.
289, June 1925 (Cape seas). —
McCulloch, Mem. Austral. Mus.,
vol. 5, pt. 1, p. 86, June 29, 1929
(reference).

Syngnatus pelagicus Osbeck,
Reise Ost Indien, p. 400, 1765
(der Grasse).

Africa, Special Rep. no. 1, 1923, p. 19.

Depth $2\frac{1}{4}$ to $2\frac{1}{2}$; head $2\frac{2}{3}$ to 3, profile sloping, nearly straight, no sharp frontal ridge, forehead very broad. Eye $3\frac{3}{4}$ to $4\frac{1}{2}$ in head, $1\frac{1}{3}$ to $1\frac{2}{3}$ in snout, $1\frac{1}{3}$ in interorbital, slightly less than preorbital depth; 4 upper canines, 4 to 6 below, outermost molars always longest, 3 or 4 or 5 inner series in upper and 2 or 3 in lower jaw; interorbital slightly convex; preorbital longer than deep, not reaching down to mouth angle, lower edge straight. Gill rakers 10 below on first arch.

Scales 59 to 61 in lateral line, 9 or 10 above, 19 to 21 below, 12 to 15 rows on cheek and preopercle flange scaly.

D. XII, 10, rarely XI, 11, fourth ray and fourth or fifth spines longest; A. III, 8 or rays 7 to 9, second and third spines

1230

Depth $16\frac{3}{4}$ to $18\frac{3}{5}$; head 6 to $6\frac{2}{3}$, width $4\frac{1}{5}$ to $4\frac{1}{2}$. Snout $1\frac{4}{5}$ to $1\frac{7}{8}$ in head from snout tip; eye $6\frac{2}{3}$ to $7\frac{1}{2}$, $3\frac{3}{4}$ to 4 in snout, greater than interorbital; median low rostral beel ends in interorbital; lateral rostral beel forms upper ^{interorbital nearly level;} or supraorbital beel; occiput with slight median beel back to first trunk ring; opercle with short basal beel, with fine numerous radiating striae.

Rings 17 or 18 + 32 to 34; transversely striated, edges of beels prominent and smooth. Upper trunk beel extends to penultimate ring of dorsal base, discontinuous with upper caudal beel, which begins on first to third rings of dorsal base; median lateral trunk beel discontinuous at tail; lower trunk and caudal beels continuous; median ventral

1231

trunk keel reaches nearly to vent.
Brood pouch on 14 caudal rings.

D. 29 or 30, on 1 to 3 trunk and
6 caudal rings, fin height $3\frac{4}{5}$ to
4 in total head; A. 6 to $6\frac{1}{4}$,
rays 4; caudal rays 10, fin $3\frac{4}{5}$
to $5\frac{1}{4}$ in total head; pectoral
 $4\frac{1}{4}$ to $5\frac{1}{4}$, rays 13 or 14.

Brown, under surfaces
paler to lighter. On each side of
trunk, between median lateral
and lower trunk keels and above
lower caudal keel, narrow silvery
or livid white bar, most
distinct on trunk and obscure
or faded out on posterior caudal
rings.

Arabia, South Africa, Mauritius,
Reunion, Malacca, East Indies,
China, South Australia, New
Zealand. Also in the tropical
Atlantic.

U. S. N. M., No. 12566. No locality.
British Museum. Length 75 to 138
mm. Eight examples.

Syngnathus temminckii Kaup(no description)
Archiv Naturges., vol. 19, pt. 1, p. 232, 1853

Syngnathus temminckii Kaup, Cat.
Lophobr. Fish Brit. Mus., p. 36, 1856
type locality, Cape of Good Hope. —
Bleeker, Ned. Tijds. Ned. Indië,
vol. 21, p. 56, 1860 (reference). —
Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 165, 1870 (copied). —
Duméril, Hist. Nat. Poiss., vol. 2,
p. 567, 1870 (copied). — Gilchrist,
Marine Investig. South Africa,
no. 6, p. 156, 1901 (reference).

Syngnathus temminckii Barnard,
Ann. South Afric. Mus., vol. 21, pt. 1,
p. 288, June 1925 (Cape Seas).

6 examples. Sipaduan Island,
Sibulan Bay, Borneo. September 28,
 1909. Length 53 to 66 mm.

4 examples. Titanbi reef, vicinity
 Sarwel Bay, Borneo. September 24,
 1909. Length 83 to 105 mm. [1994.]

12920. Buksa Buksa Island, Gulf
 of Tomini, Celebes. November 20, 1909.
 Length 44 mm.

16224. Cape Kait, Libani Bay, Celebes.
 December 29, 1909. Length 104 mm.

12781 and 12782. Limbe Strait,
 Celebes. November 10, 1909. Length 78
~~74 mm~~ to 100 mm. 3 examples.

2 examples. Kayoa Island. November
 29, 1909. Length 66 to 85 mm.

21478. Howarra Island. December 2,
 1909. Length 68 mm.

13669. Makyan Island. November 29,
 1909. Length 60 to 97 mm. 2 examples.

1234

Head 9; rugose. Tail rather longer than body. Snout long as postorbital.

Rings $19 + 37$; smooth.

D. 31, begins in advance of vent. Brood pouch half long as tail.

Smutty yellowish brown, irregularly speckled. Length not given. (Günther.)

South Africa.

1234a

Syngnathus acus Linnaeus

Syngnathus acus Linnaeus,
Syst. Nat., ed. 10, pt. 1, p. 337, 1758.
type locality, "in Europa").

— Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 157, 1870 (Cape of Good
Hope; Madagascar). — Sauvage,
Hist. Nat. Madagascar, Poiss.,
p. 506, 1891 (Madagascar; type of
Syngnathus brachyrhynchus).

Weber and Beaufort, Fish. Indo
Austral. Archip., vol. 4, p. 88, fig. 37,
1922 (Pulu Weh; Palabuan ratu,
Java; Java Sea). — Barnard, Ann.
South Afric. Mus., vol. 21, pt. 1,
p. 288, June 1925 (Table Bay, False
Bay, East London).

Syngnatus acus Fatjou and Leu,
Abhandl. Senckenberg. naturf. Gesell.,
vol. 21, p. 529, 1879 (Zanzibar).

Syngnathus brachyrhynchus Kaup,
Cat. Lophobr. Fish Brit. Mus., p. 42,
1856 (type locality, Isle of Bourbon).
— Guichenot, Notes Ile Réunion,
vol. 2, p. 30, 1862. — Gilchrist,
Marine Invertebr. South Africa, no.
6, p. 156, 1901 (Cape of Good Hope).

Known from the East Indies
and Philippines. Though related
to Plesiops quite unlike it in
appearance, differing especially
in the shorter body and enlarged
soft vertical fins.

(καλλος, beautiful; Plesiops.)

Analysis of the species.

u.¹ Cheek with 3 rows of scales; body
and fins covered with moderately
large white spots. niveus

u.² Cheek with 2 rows of scales; body
and fins covered with very fine or
small white dots, on body one to
each scale. argus

Syngnathus delalandei Kaup,
Cat. Lophobr. Fish Brit. Mus., p.
45, 1856 (type locality, Cape of
Good Hope).

Syngnathus delalandei Bleeker,
Nat. Tijds. Ned. Indië, vol. 21,
p. 56, 1860 (reference).

Syngnathus delalandii Duméril,
Hist. nat. Poiss., vol. 2, p. 552,
1870 (type).

Typlus delalandei (Bibron) Kaup,
Cat. Lophobr. Fish Brit. Mus., p.
45, 1856 (name in synonymy).

Callopleksiops new genus.

Type Callopleksiops minens new species.

Body robust, short. Head rather large. Snout short. Eye moderate. Mouth rather large, mandible protruding. Maxillary exposed, with supplemental bone. Teeth villiform. Preorbital narrow. Preopercle entire. Opercle unarmed. Gill rakers rather short, few. Lateral lines 2. Scales large, ctenoid. Dorsal single with 11 spines and 7 rays, membrane not deeply

Depth $27\frac{1}{4}$ to 29; head $6\frac{3}{4}$ to $7\frac{1}{8}$, width $4\frac{1}{2}$ to $5\frac{2}{5}$. Snout $1\frac{4}{5}$ to $1\frac{7}{8}$ in head from snout tip; eye 8 to $8\frac{3}{5}$, 4 to $4\frac{1}{2}$ in snout, greatly exceeds interorbital; maxillary $4\frac{1}{3}$ to $4\frac{2}{5}$ in snout; interorbital $1\frac{3}{4}$ to 2 in eye, deeply concave; receives upper median keel from snout; opercle with slight or short low ridge, with many radiating striae all around.

Rings 18 to 20 + 38 to 40; with fine transverse striae. Keels nearly smooth, without spines or sharp serrae; upper trunk keel discontinuous with upper caudal keel, reaches opposite hind edge of dorsal; median lateral trunk keel ^{dis}continuous with upper caudal keel, ^{though closely approximated at last trunk ring} lower trunk and caudal keels continuous; median ventral trunk keel to vent. Occipital keel low, reaches first trunk ring.

1234e

D. 31 to 40, on 1 or 2 trunk and
6 or 7 caudal rings, fin height
 $5\frac{1}{2}$ to $6\frac{3}{4}$ in total head length;
A. 3 or 4 rays, long as eye; caudal
 $4\frac{1}{5}$ to $4\frac{1}{2}$ in head; pectoral
9 to $9\frac{1}{4}$, rays 12 to 14.

Brown above, paler below.
Dorsal pale brown, with dark ^{brown} spots.

South Africa, Madagascar,
Zanzibar, Reunion, Bourbon,
East Indies. Also in the Eastern
Atlantic, Mediterranean and
Black Seas.

U. S. N. M., No. 35825. Europe. 12341

C. L. Bonaparte Collection.

Presented by the Academy of Natural
Sciences of Philadelphia. Length
223 to 238 mm. Three examples.

Syngnathus schlegelii Kaup

1234g

Syngnathus schlegelii Kaup, Cat.
Lophobr. Fish Brit. Mus., p. 46,
1856 (type locality, "Chinese").

— Bleeker, Ned. Tijds. Dierk.,
vol. 4, p. 126, 1873 (1874) reference).

— Jordan and Snyder, Proc. U. S.
Nat. Mus., vol. 23, p. 744, 1901

(Yokohama); vol. 24, p. 7, 1901 (1902)

(Itaru, Mororan, Hakodate,
Omori, Matsushima, Tokyo,
Misaki, Wakunoura, Suruga,
Saminichi). — Jordan and Seale,

Proc. U. S. Nat. Mus., vol. 24, p.
52, 1906 (Shanghai). — Franz,

Abhandl. Kon. Bayer. Akad. Wiss.,
vol. 4, Suppl. Band 1, p. 22, 1910

(Fukuoka, Japan, Oburatsubo,
Misaki, Long Canal). — Snyder,

Genus Grammistes Schneider.

Grammistes Schneider, Syst. Ichth. Bloch, 1801, p. 185. Type Grammistes orientalis Schneider, designated by Bleeker, Arch. Néerl. Sci. Nat. Harlem, vol. 11, 1876, p. 258.

Body compressed. Mouth large, protractile. Chin with rudimentary dermal appendage. Maxillary exposed, with supplemental bone. Bands of villiform teeth in jaws and on vomer and palatines; tongue smooth. Preopercle with 2 or 3 spines on hind edge. Opercle with 3 strong spines. Gill membranes separate. Pseudobranchial present. Gill rakers short. Branchiostegals 7. Vertebrae 24, of which 13 caudal. Scales very small, cycloid, and obtusely beaked scales enveloped in slimy coating of epidermis. Head

Proc. U. S. Nat. Mus., vol. 42, p. 437,
 1912 (Mori; Same; Misaki. —
 Jordan, Tanaka, Yonge, Journ.
 College Sci. Tokyo, vol. 33, p. 15,
 1913 reference, — Linnaeus,
Illustrat. Zool. Aquat. Plant.
Animal., vol. 1, pl. 17, fig. 1, 1731.
 — Chu, Biol. Bull. U. S. Nat.
 Mus., no. 1, p. 17, January 1901
 reference).

Syngnathus schlegelii Günther,
 Cat. Fish. Brit. Mus., vol. 8, p. 160,
 1870 China. — Bernier, Hist.
 Nat. Poiss., vol. 2, p. 554, 1870
 Japan; China. — Ther, Cat.
 Fauna Filipina, vol. 1, p. 576, 1875
 (Luzon; Cavite; Santa Cruz). — Seale
 and Bean, Proc. U. S. Nat. Mus.,
 vol. 33, p. 240, 1907 (Zamboanga).

lateral band from eye to caudal base. Iris silvery white. Fins all pale brown. Caudal with median ray & rayish terminally.

Only known from the type. Its pale coloration with a diffuse silvery median lateral band is distinctive.

4356 ~~from the coast of Kenya, vicinity of Mombasa~~ ~~Kenya~~ no data. Length 100 mm.

(albus white; fascia ~~caerulea~~, band;

1234

Xiphostoma schlegelii Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 58, 1901 (reference).

Syngnathus tenuirostris (not Rathke) Schlegel, Fauna Japonica, Poiss., p. 273, pl. 120, fig. 5, 1846 (type locality, Japan).

Depth 41 to $45\frac{1}{3}$; head $7\frac{3}{4}$ to $8\frac{3}{4}$, width $5\frac{1}{3}$ to $5\frac{3}{4}$. Snout $1\frac{3}{5}$ to $1\frac{3}{4}$ in head from snout tip; eye $7\frac{1}{3}$ to $7\frac{1}{8}$, $4\frac{1}{2}$ to $4\frac{7}{8}$ in snout, greater than interorbital; maxillary $1\frac{1}{4}$ to $1\frac{1}{2}$ in eye; interorbital $1\frac{1}{2}$, concave; upper rostral median keel to interorbital, and lateral ridge or keel each side forms supraorbital ridge; occipital keel low, short, extends back on first 2 trunk rings;

5 above, 13 below, 24 predorsal,
 7 across cheek to preopercle edge;
 maxillary with 4 rows of scales
 transverse; soft dorsal and
 anal with small basal scales;
 caudal largely covered with fine
 scales. Scales with 11 basal radiating
 striae; apical denticles 73,
 slender, biserial; circuli fine.

D. X, 14, I, third spine 2 in head,
 twelfth ray $1\frac{1}{4}$; A. III, 7, I, third
 spine $2\frac{7}{8}$, fourth ray $1\frac{1}{8}$; caudal
 (broken) about equals head, deeply
 emarginate; least depth of caudal
 peduncle 2; pectoral $1\frac{1}{4}$; ventral
 $2\frac{1}{2}$ in combined head and body
 to caudal base.

Uniformly light brown, lower sides
 and under surface silvery white.
 Diffuse, obscure median pale

1234j

short obscure keel on front of opercle, with faint, fine, close set, radiating striae.

Rings 19 to 21 + 41 to 45; with fine transverse striae. Keels low, smooth; upper trunk keel reaches hind part of dorsal base, discontinuous with upper caudal keel; median lateral trunk keel continuous, seldom discontinuous, with upper caudal keel; lower trunk and caudal keels continuous; median ventral trunk keel to vent. Broad pouch on 28 caudal keels.

D. 39 or 40, on 1 trunk and 9 or 10 caudal rings, fin height 5 in total head; A. 3 or 4 rays, $1\frac{1}{4}$ to $1\frac{2}{5}$ in eye; caudal $3\frac{1}{3}$ to $3\frac{3}{4}$ in head; pectoral $5\frac{1}{3}$ to $5\frac{4}{5}$, rays 14 or 15.

Brown above, pale to whitish below. Slightly darker brown band along side of snout, over

1237h

postocular and along upper side
of trunk. Iris grayish. Under
side of head and trunk more or
less white. Dorsal pale brown.
Caudal brown, dark neutral gray
terminally. Pectoral and anal
pal.

Philippines, China, Japan.

U. S. N. M., no. 70717. Hokkaido,
Japan. Albatross Collection.
Length 149 to 212 mm. Nine examples.

1734L

Syngnathus phlegon Risso

Syngnathus phlegon Risso, Hist.
Nat. Eur. Mérid., vol. 3, p. 181, ^{pl. 15, fig. 41,} 1826
(type locality, Nice).

- Kaup, Cat. Lophobr. Fish Brit. Mus.,
p. 41, 1856 (Palermo; Corsica; Cape of
Good Hope). — Bleeker, Nat. Tijds.
Ned. Indië, vol. 21, p. 56, 1860 (reference).
— Duméril, Hist. Nat. Poiss., vol. 2,
p. 551, 1870 (Cape of Good Hope). —
Günther, Cat. Fish. Brit. Mus., vol.
8, p. 156, 1870 (Corsica?). —
Gilchrist, Marine Investig. South
Africa, no. 6, p. 156, 1901 (compiled).
— Barnard, Ann. South Africa
Mus., vol. 21, pt. 1, p. 289, June 1925
(Cape seas).

1467

Bull. Bur. Fisher., vol. 26, 1906 (1907), p.
78 (Baum). — Regan, Journ. Linn. Soc.
London, ser. 12, vol. 2, 1907, p. 224
(Solomon, Phagos Archipelago). —
Gilchrist and Thompson, Ann. South
Afr. Mus., vol. 6, 1908-11, p. 145 (Jetty
Point; Durban, Natal). — Weber,
Siboga Exped., vol. ^{57, Fische,} 65, 1913, p. 214
(Sanguisapo, Sulu Archipelago;
Pepela Bay, Rotti). — Beaufort,
Bijdr. Dierk. Amsterdam, 1913, p. 112
(Huonek, Waigiu). — Pellegrin, Bull.
Soc. Zool. France, vol. 39, 1914, p. 224
(Fort Dauphin, Madagascar). — Tanaka,
Fig. descr. Fisher Japan, vol. 33, Aug. 14,
1924, p. 626, pl. 150, fig. 414 (Tanabe).
— Fowler, Bishop Mus. Bull., no. 22,
1925, p. 9 (Guam). — Barnard, Ann.
South Afr. Mus., vol. 21, 1927, p. 492
(Natal).

1234m

Depth 28 to 38; head $6\frac{1}{8}$ to $7\frac{1}{4}$, width $5\frac{1}{4}$ to $5\frac{3}{4}$. Snout $1\frac{3}{5}$ to $1\frac{2}{3}$ in head from snout tip; eye $5\frac{4}{5}$ to $6\frac{1}{3}$, $3\frac{7}{8}$ to 4 in snout, greatly exceeds interorbital; maxillary $1\frac{1}{4}$ to $1\frac{1}{3}$ in eye; interorbital $1\frac{1}{2}$ in eye, concave, rather short keel on front half of opercle, with many fine radiating striae; short median occipital keel and another longer on first two trunk rings.

Rings 18 or 19 + 41 to 44; with fine transverse striae. Keels trenchant, end with spine at each articulation; upper trunk keel discontinuous with upper caudal keel, reaches well behind middle of dorsal; median lateral trunk keel ends at last trunk ring; lower trunk and caudal keels continuous; median ventral trunk keel nearly

to vent.

D. 40 or 41, on 1 to 3 trunk and 10 to 12 caudal rings, fin height $3\frac{1}{2}$ to $4\frac{2}{3}$ in total head length; A. minute; pectoral 5, rays 15 or 16; caudal $4\frac{2}{5}$ to $4\frac{3}{4}$ in head.

Pale brown, lighter below. Darker brown lateral shade, at least on trunk. Fins all pale. Iris gray.

Red Sea, South Africa. Also in the Eastern Atlantic and Mediterranean.

U. S. N. M., no. 48321. Bay of Naples, Italy. S. E. Meek. Length 107 to 119 mm. Three examples.

The three following species have been referred to Syngnathus, though all without an opercular keel. I have seen no materials representing them and am therefore uncertain of their generic position.

1234_o

Syngnathus alternans Günther
Syngnathus alternans Günther,
Cat. Fish. Brit. Mus., vol. 8, p. 162,
1870 (type locality, Seychelles).

Tail twice long as trunk. Snout twice postorbital, with low median ridge above, which simply passes into suture between frontal bones; supraorbital edge faintly continued on side of crown; opercle with scarcely trace of keel near base, with fine radiating striae.

Rings 20 + 41; without spines. Lateral ^{median} trunk keel continuous with upper caudal keel. Brood pouch on 23 caudal rings. Two nuchal plates with low median ridge.

21546. Bagacay Bay, Escarpada Island, between Samar and Masbate. March 13, 1909. Length 142 mm. [1332.]

17056. Bisucay Island, Cuyo Islands. April 9, 1909. Length 117 mm.

5141 and 21029. Little Santa Cruz Island, Zamboanga. May 28, 1908. Length 133 to 140 mm.

20533. Port Galera, Mindoro. October 27, 1909. Length 78 mm.

15347 and 20436. Port Palapag, east coast Luzon. June 3, 1909. Length 105 to 146 mm.

1 example. Romblon Reef. March 26, 1908. Length 107 mm. [497.]

15642. Sablayan, Mindoro Island. December 13, 1908. Length 85 mm.

13946 and 13947. Sabtan Island, China Sea. November 8, 1908. Length 108 to 135 mm.

1234 1

D. 39, on 2 trunk and 9 caudal
rings; caudal and pectoral
well developed.

Body and tail with 14 brown
cross bands, broad as or
broader than interspaces. Length
188 mm. (Günther.)

Seychelles.

1234g

Syngnathus acusimilis Günther

Syngnathus acusimilis Günther,
Ann. Mag. Nat. Hist., ser. 4, vol.
12, p. 380, 1878 (type locality,
Chefoo, China). — Chu, Biol.
Bull. St. John's Univ., no. 1, p. 97,
January 1931 (reference).

Syngnathus hiphostoma
acusimilis Rendahl, Arkiv för
Zoologi, vol. 16, no. 2, p. 5, 1924
(Feng tien, Hukiao).

20000. San Miguel Island. April 21, 1908, 1490
Length 60 mm.

17599. San Miguel Island,
Tabaco Bay, east coast Luzon.

June 4, 1909. Length 156 mm.

8692. Tutu Bay, Jolo Island,
second anchorage. September 19, 1909.
Length 119 mm.

21358. Linibe Strait, Celebes.
November 11, 1909. Length 114 mm.

14395. Talisse Island, north of
Celebes. November 9, 1909. Length 115 mm.

13058. Gomomo Island, Pitt Passage.
December 3, 1909. Length 121 mm.

2 examples. Togian Bay, Togian Island,
Gulf of Tomini, Celebes. November 19, 1909.
Length 59 to 60 mm.

Tail $1\frac{1}{2}$ times longer than body.
Snout equals space between front
eye edge and middle of pectoral;
low ridge on median line of upper
side of snout; crown, temple
and opercle without ridges.

Rings 20 + 41. Lateral trunk
keel and upper caudal keel
discontinuous.

D. 43 to 45, on 2 trunk and 11
caudal rings; caudal well
developed. Length 206 mm.
(Günther.)

Syngnathus curtirostris Castelnau

Syngnathus curtirostris Castelnau,
Proc. Zool. Acclimat. Soc. Victoria,
vol. 1, p. 243, 1872 (type locality,
St. Vincent Gulf, South Australia);
vol. 2, p. 71, 1873 (South Australia).

— Macleay, Proc. Linn. Soc. New
South Wales, vol. 6^{pt. 2}, p. 290, 1882
(compiled). — Uncker, Fauna

N. W. Austral. Michaelsen and
Hartmeyer, vol. 2^{pt. 1}, p. 244, 1901, (St. Vincent Gulf).

McCulloch and Waite, Rec. South
Austral. Mus., vol. 1, p. 39, pl. 5,
fig. 1, 1918 (South Australia).

— Waite and Hale, Rec. South
Austral. Mus., vol. 1, no. 4, p. 300,
fig. 42, January 27, 1921 (Spencer
Gulf; St. Vincent Gulf; Glenelg
River near Mount Gambier;
Kangaroo Island). — Waite, Rec.

Plesiops semeion Tanaka, Zool.
Mag., vol. 29, no. 345, July 15, 1917,
p. 200. Tanabe, Province of Kii.

Pharopteryx semeion Tanaka, Fig.
Descript. Fishes Japan, vol. 28, November
28, 1918, p. 500, pl. 137, fig. 382 (type).

p. 53, 1234t

South Austral. Mus., vol. 2, no. 1, fig. 80,

April 23, 1921 (reference). —

Mac Culloch, Mem. Austral. Mus.,

vol. 5, pt. 1, p. 86, June 29, 1929

(reference).

June 29

673

Sparus dentatus (Gilchrist and Thompson)
Chrysophrys dentatus Gilchrist and Thompson,
Ann. South African Mus., vol. 6, 1908-11,
p. 173. Natal; Ann. Durban Mus., vol. 1,
pt. 4, 1917, p. 361. $\frac{1}{2}$ Van Bonde, Fish. Marine
Surv. South Africa, Special Rep. No. 1, 1923,
p. 18.

Sparus dentatus Fowler, Proc. Acad. Nat.
Sci. Philadelphia, 1925, p. 236 (Natal).

Sparus dentatus Bernard, Ann. South
African Mus., vol. 21, pt. 2, 1927, p. 697
(Natal coast and Delagoa Bay).

Depth $2\frac{1}{5}$; head $2\frac{7}{8}$, width $1\frac{7}{8}$. Snout
2 in head from snout tip; eye $4\frac{3}{5}$, $2\frac{2}{5}$
in snout, $1\frac{2}{5}$ in interorbital; maxillary
length $2\frac{1}{3}$ in head; mouth gape reaches
opposite nostril; outer series of 7 large
molars, inner series of 5 irregularly
smaller; interorbital 3, convex. Gill
rakers 9+12, lanceolate.

1234#

Syngnathus parviceps Ramsay and
Ogilby

Syngnathus parviceps Ramsay and
Ogilby, Proc. Linn. Soc. New South
Wales, ^{ser. 2} vol. 1, ^{pt. 2} p. 475, ^{August 23,} 1856 (type
locality: Clarence River, New South
Wales). — Duncker, Fauna Südew.
Austral. Michelson and Hartmeyer,
vol. 2, ^{pt. 1} p. 246, 1907 (Clarence River).

Corythoichthys parviceps McCulloch,
Mem. Austral. Mus., no. 5, pt. 1, p.
87, June 29, 1929 (reference).

14 rows above, 27 rows below, 20 rows on predorsal to occiput, 15 to 18 rows on cheeks to preopercle angle, muzzle, maxillary and interorbital naked. Fins, except spinous dorsal, with small scales basally. Scales with 57 to 63 radiating striae; circuli moderately fine.

D. VII, 13, I, second spine $2\frac{3}{5}$ to $3\frac{1}{3}$ in total head length, eighth ray 2 to $2\frac{1}{8}$; A. I, 9, I, fourth ray $\frac{1}{2}$ to $2\frac{1}{8}$; caudal $1\frac{1}{2}$ to $1\frac{2}{3}$, convex behind; least depth of caudal peduncle $2\frac{2}{5}$ to $2\frac{7}{8}$; pectoral $1\frac{3}{4}$ to $1\frac{4}{5}$; ventral 2 to $2\frac{1}{3}$.

Dark brown generally, with about 5 whitish broad longitudinal bands in young, which alternate and become narrow with age when about 8 are formed. These

1234_n

Head 3 to $3\frac{1}{2}$ in trunk, $11\frac{1}{5}$ in total. Snout $2\frac{1}{2}$ to $2\frac{2}{3}$ in head, long as postorbital, with low crest; interorbital slightly concave, convex on median line; head with reticulating raised lines; opercle with radiating series of raised lines but no keel; supraorbital, occipital and nuchal ridges feeble.

Rings 18 or 19 + 42 to 44; little deeper than wide, depth equals snout length. Keels well defined, upper trunk keel extends behind hind part of dorsal; abdominal keel of trunk ends above vent, below origin of upper caudal keel; lower trunk keel continuous; ventral surface little wider than dorsal. Brood pouch on 16 caudal rings.

D. 20 to 24, on 0 to 1 trunk and 4 or 5 caudal rings; A. rays 3; caudal 10, rounded, longer than eye; pectoral 8 or 9.

Male brown, head with broad cross band on occiput and another between eyes. Lower surfaces with irregular brown bars radiating from eye and enclosing white interspaces. Body with slightly darker cross bars on back, light oval spots encircle lateral line on each ring and also ring junctions, large dark spots on lower half of each ring of trunk. Tail and egg pouch variegated with brown, reticulating lines.

Female with ground color dark brown. Snout and opercles mottled with white and series of white dots encircle eye. Few white marks on occiput. Sides of body and tail with irregular gray marks. Under side of trunk light brown with white mottlings. Dorsal fin pale, with small brown spots. Caudal brown.
Length 164 mm. (Waite and Hale.)
South Australia.

Genus Corythoichthys Kaup

Corythoichthys Kaup, Cat. Lophobr.
Fish Brit. Mus., p. 25, 1856. (Type
Corythoichthys albirostris Kaup,
designated by Jordan, Tanaka, Snyder,
Journ. College Sci. Tokyo, vol. 33, art. 1, p.
97, 1913.)

Corythoichthys Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 24, p. 7,
1901. (Type Corythoichthys albirostris
Kaup.)

Body short, rather stout. Snout
slender, straight, equals postorbital
or rest of head. Upper profile of
head abruptly rising to orbits,
which prominent. Lower profile
straight from chin. Supraorbital
ridge continued on occiput.
Opercle crossed by complete
longitudinal keel. Shields rough.

1236

edges more or less prominent and smooth, slightly crenulated, rarely serrated. Upper keels of tail and trunk discontinuous, lower keels of trunk and tail continuous, median keels of trunk and upper keels of tail partly continuous. Intermedial shields (scutella) present, also prenuchal and 1 nuchal shield. Dorsal entirely or nearly entirely in front of caudal rings, rays 28 to 34. Anal, pectorals and caudal present. Tail more or less than twice long as trunk. Eggs small, numerous, incompletely isolated in cutaneous cells on lower surface of tail, laterally protected by low diverging cutaneous folds.

Marine fishes of coral reefs and near shore in the Indo Pacific, also the east coast of South America.

Analysis of Species

- a.¹ Snout long, less than 2 in head
(long and pointed in modestus).
- b.¹ Caudal rings 33 to 40.
- c.¹ Keels on head and body smooth.
- d.¹ Snout compressed, much
deeper than wide. altirostris.
- d.² Snout slender, cylindrical.
flavofasciatus.
- c.² Keels on head and body sharply
serrated. crenulatus.
- b.² Caudal rings 40 to 49.
- e.¹ Coloration variegated.
- f.¹ Snout $1\frac{2}{3}$ in head. pocillolaemus.
- f.² Snout $1\frac{9}{10}$ in head. philippi.
- e.² Coloration uniform brown. sawagii
~~saugii~~
- a.² Snout short, more than 2 or 3 in
head.
- g.¹ Opercular keel long, complete.
- gh.¹ Rings 15 to 17 + 41 to 43.
- h.¹ ~~18 to 20~~ vercoi.
- h.² ~~32~~ corrugatus.

1238
g^h.² Rings 20 + 35 to 37; D. 21 to 23.
margaritifera.

~~g² Opercular keel only on basal
half or less of bone.~~
brevirostris.

1239

Corythoichthys altirostris Ogilby

Corythoichthys altirostris Ogilby, Rec.
Austral. Mus., vol. 1, pt. 3, ^{p. 55, July}, 1896
(type locality, Moreton Bay, Queensland;
Clarence River, ~~East~~ South Wales).
— (Mc Culloch) and Whittham, p. 1.

— Sevener, Fauna Südw. Austral.
Michaelson and Hartmeyer, vol. 2, pt. 1, p.
244, 1909 (Moreton Bay, Clarence River).
— Sevener, p. 100, June
29, 1929 (reference).

Head 7, 3 in head and trunk.
Snout $1\frac{3}{4}$ to 2 in head, strongly
compressed, much deeper than wide,
curved upwards at tip; low well
defined ridge along middle of
upper surface of snout, sometimes
ends medially in interorbital,
sometimes bifurcated joining moderate
superciliary ridges which continue
backwards on nape; low straight

1239

Corythoichthys altirostris Ogilby

Corythoichthys altirostris Ogilby, Rec.
Austral. Mus., vol. 1, pt. 3, ^{2.55, July} 1890
(type locality, Moreton Bay, Queensland;
Clarence River, ~~near~~ South Wales.)
McCulloch and Whitley, Mem.
Queensland Mus., vol. 8, pt. 2, p. 137,
July 7, 1925 (reference). — McCulloch,
Mem. Austral. Mus., ^{pt. 15} no. 5, p. 86, June
29, 1929 (reference).

Head 7, 3 in head and trunk.
Snout $1\frac{3}{4}$ to 2 in head, strongly
compressed, much deeper than wide,
curved upwards at tip; low well
defined ridge along middle of
upper surface of snout, sometimes
ends medially in interorbital,
sometimes bifurcated joining moderate
superciliary ridges which continue
backwards on nape; low straight

opercular spines 3, lower closer to median, uppermost most advanced. Gill rakers $10 + 17$, lanceolate, equal gill filaments - or $2\frac{1}{4}$ in eye.

Scales 98 to 102 in lateral line to caudal base and 12 to 15 more on latter; tubes 51 to 65 in lateral line to caudal base and 2 or 3 more on latter; 17 or 18 scales above lateral line, 22 below, 85 to 100 predorsal forward to snout end, 31 or 32 rows of scales obliquely over cheek from lower hind eye edge to preopercle angle; many of large scales with numerous minute basal auxiliary scales, often appearing imbedded; ^{fine} finely scaled over greater basal portions; maxillary usually naked, sometimes with small patch of small

ridge across middle of opercle;
not reaching hind edge; no
lateral rostral groove; nuchal
ridge present.

Rings $17 + 40$. Body much deeper
than wide, abdominal profile
not dilated; ~~low well defined~~
~~ridge along~~ all body keels well
defined; lateral keels ceasing
on middle of ventral ring;
lower caudal keel continuous with
lower trunk keel; median ventral
keel prominent, acute. Brood
pouch over 18 rings, $\frac{1}{2}$ of tail
without short caudal.

D. 28, on 7 anterior caudal
rings, not elevated above level
of back; A. rays 2; caudal 10?;
pectoral 16.

Wales, vol. 5, 1881, p. 407 (Port Jackson,
 Victoria, New South Wales). $\frac{1}{m}$ Woods,
 Fish and Fisher. New South Wales, 1882,
 p. 39, pl. 7. $\frac{1}{m}$ Lucas, Proc. Roy. Soc.
 Victoria, series 2, vol. 2, 1890, p. 20. $\frac{1}{m}$
Ogilby, Edible Fishes New South Wales,
 1893, p. 42, pl. 12; Handbook of Sydney,
 1898, p. 130. $\frac{1}{m}$ White, Mem. New South
 Wales Nat. Club, No. 2, 1904, p. 26. $\frac{1}{m}$
Stead, ~~Edible Fishes New South Wales, 1908,~~
~~pp. 49, pl. 19~~ Fishes of Australia, 1906, p.
 91 (New South Wales, Queensland,
 Victoria, Tasmania, South and West
 Australia); Edible Fishes New South Wales,
 1908, p. 49, pl. 19. $\frac{1}{m}$ Roughley, Fishes of
 Australia, 1916, p. 52, pl. 12 (South
 Queensland, New South Wales, Victoria,
 Tasmania, South and West Australia,
 New Zealand). $\frac{1}{m}$ McCulloch, Records
 Australian Mus., vol. 13, 1920, p. 60, pl. 14,

Uniform brown, with dark lateral stripe from snout tip through eye to lower half of opercle, where broken into blotches. Dorsal speckled with brown. Length 146 mm. (Ogilby.)

New South Wales, Queensland.

771

cat²⁹ Girella tricuspidata (Quoy and Gaimard)

Boops tricuspidatus Quoy and Gaimard,
Voy. Uranie, Zool., 1824, p. 296.

Shark Bay, West Australia.

Ablata tricuspidata Valenciennes, Hist.
Nat. Poiss., vol. 6, 1831, p. 372 (Shark
Bay).

Girella tricuspidata Günther, Cat.
Fishes Brit. Mus., vol. 1, 1859, p. 428
(Sydney; Australia); Ann. Mag. Nat.
Hist., series 3, vol. 20, 1867, p. 57 (New South
Wales). $\frac{1}{m}$ Steindachner, Sitz. Ber. Akad.
Wiss. Wien, math.-naturwiss. Classe,
vol. 56, pt. 1, 1867, p. 324 (Cape York). $\frac{1}{m}$
Klunzinger, Sitz. Ber. Akad. Wiss.
Wien, math.-naturwiss. Classe, vol. 80,
pt. 1, 1879, p. 355 (Hobson's Bay and Port
Philip). $\frac{1}{m}$ Johnston, Proc. Roy. Soc.
Tasmania, 1881, p. 49 (Southport). $\frac{1}{m}$
Macleay, Proc. Linn. Soc. New South

1242

Corythoichthys flavofasciatus (Rüppell)

Syngnathus flavofasciatus Rüppell,
Neue Wirbelth., Fische, p. 144, 1835
(type locality, Djedda, Red Sea).

— Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 156, 1870 (copied). —

Klunzinger, Verh. Zool. Bot. Ges.
Wien, vol. 21, p. 649, 1871 (Red Sea).

— Weber, Siboga Exped., vol. 57, Fische,
p. 108, 1913 (Sulu; Albi Major;
Saleyer; South Brionga Island;
Great Kei; High Kei).

Corythoichthys flavofasciatus Fowler,
Bull. Bishop Mus., no. 22, p. 7, 1925
(Guam); Mem. Bishop Mus., vol. 10,
p. 113, 1928 (Fate', New Hebrides;
Samoa). — McCulloch, Mem. Austral.
Mus., vol. 5, pt. 1, p. 87, June 27, 1929 (reference).

7814. Bugsuk Island, north
Butabac Strait. January 5, 1909.
Length 483 mm.

8802 to 8804. Butanan Island.
June 13, 1909. Length 284 to 479 mm.

8378. Culangaman Island, between
Leyte and Cebu. March 16, 1909.
Length 446 mm.

7552. Endeavor Strait, Malampaya
Sound, Palawan Island. December
23, 1908. Length 276 mm.

1702. Galwaney Island, Ragay
Gulf, Luzon. March 9, 1909. Length
140 mm.

11770. Iloilo market, Iloilo.
June 2, 1908. Length 166 mm.

8364. Malapascua Island, north
of Cebu. March 16, 1909. Length 298 mm.

6300 and 6301. Manila market, Manila.
June 13, 1908. Length 236 to 246 mm.

? Syngnathus perlatus ^{Lay and} Bennett,
Voy. Blossam Beechey, [^] Zool., p. 68,
pl. 21, fig. 1, 1839 (type locality,
Loo Choo).

Zool. Forschungsr. Austral. Seemon,
vol. 5, 1895, p. 262 (Amboina). —

Fowler and Ball, Bishop Mus. Bull.,
no. 26, 1925, p. 14 (Wake Island). —

Fowler, Bishop Mus. Bull., no. 38, 1927,
p. 14 (Fanning and Christmas Islands).

Epinephelus corallicola Bleeker, Atlas
Ichth. Ind. Néerl., vol. 7, 1873-76, p.
53 (Java, Singapore, Celebes, Amboina).

— Boulenger, Cat. Fishes Brit. Mus.,
vol. 1, 1895, p. 236 (Malay Archipelago,
Manado, Pelew Islands, North Borneo,
Ponapé, Greenwich, Howland Islands).

— Jordan and Seale, Bull. Bur. Fisher.,
vol. 25, 1905 (1906), p. 259 (Lipia).

Weber, Siboga Exped., vol. 65, 1913, p.
203 (Hainisi, Samar Island).

1244

Syngnathus fasciatus (not Risso
1810) Gray, Illustrat. Indian
Zool., vol. 1, pl. 89 (Pisces pl. 6),
figs. 2-a, 1832 (type locality,
India). — Bleeker, Nat. Tijds.
ned. Indië, vol. 4, p. 597, 1853
(Halmaheira). — Günther, Fishes
of Zanzibar, p. 139, 1866. — Duméril,
Hist. Nat. Poiss., vol. 2, p. 543, 1870
(Batu; Trinkomalie; Nukahiva;
Bouru; Mauritius; Red Sea;
Zanzibar).

Corythoichthys fasciatus Kaup,
Cat. Lophobr. Fish Brit. Mus., p. 25,
1856 (Amboyna; Bourbon; Ceram;
China; Nukahiva; Red Sea). —
Bleeker, Act. Soc. Sci. Ind. néerl.
(Sumatra), vol. 8, p. 72, 1859 (Batoe,
Flores, Ternate, Boero, Amboyna,

(Thunberg). Although Boulenger gives Veranus howlandi Günther as a synonym it differs from all our examples in the larger and closer set dark spots, also its pectoral is largely unspotted, besides the fins are with greatly fewer spots. We have much larger specimens than Boulenger gives, which is 385 mm. Our materials agree entirely in the small size of the spots, their distribution and in having the pectoral always entirely spotted.

6511. Bulikias Bay, China Sea, vicinity southern Luzon. June 17, 1908. Length 287 mm.

14505. Biri Channel, Batang Island, east coast Luzon. June 2, 1909. Length 247 mm.

1245

Ceram, Banda). — Guichenot,
Notes Ile Réunion, vol. 2, p. 30,
1862. — Bleeker, Ned. Tijds.
Dierk., vol. 1, p. 263, 1863
(Atapupu, Timor); Verslag.
Akad. Wet. Amsterdam, vol. 16, p.
364, 1864 (Koussa Laut, Moluccas);
ser. 2, vol. 2, p. 281, 1868 (Dorey,
New Guinea), p. 284 (Solon).

— Weber and Beaufort, Fish. Ind. Austral.
Archip., vol. 4, p. 70, fig. 31, 1922
(Bintang; Flores; Solon; Lambleni;
Sbi major; Ambon; Ternate;
Waigiu; New Guinea; Kei; Sulu
Archipelago).

— McLachlan and Whitley,
Mem. Queensland Mus., vol. 8, pt. 2,
p. 137, July 7, 1925 (reference). —
— Hora, Rec. Indian Mus., vol. 27,
pt. 6, p. 462, pl. 11, fig. 1, December
1925 (Morrison Bay, Mergui Archipelago).

1245

Ceram, Banda). — Guichenot,
Notes Ile Réunion, vol. 2, p. 30,
1862. — Bleeker, Ned. Tijds.
dierk., vol. 1, p. 263, 1863
(Atapupu, Timor); Verslag.
Akad. Wet. Amsterdam, vol. 16, p.
364, 1864 (Koussa Laut, Moluccas);
ser. 2, vol. 2, p. 281, 1868 (Dorey,
New Guinea), p. 284 (Solor). —

Ogilby, Mem. Queensland Mus., vol.
2, p. , 1913 (Hornley Island). —

Duncker, Mitteil. Naturh. Mus.
Hamburg, vol. 32, p. 72, 1914 (1915)

Red Sea; East Africa; Indo Pacific;
Samoa). — McCulloch and Whitley,
Mem. Queensland Mus., vol. 8, pt. 2,
p. 137, July 7, 1925 (reference). —

— Hora, Rec. Indian Mus., vol. 27,
pt. 6, p. 462, pl. 11, fig. 1, December
1925 (Morrison Bay, Mergui Archipelago).

New Guinea),

Ogilby, Mem. 2
p. 1913 (H
55-57

Luncker, Mitteil.

Hamburg, vol. 3.
55-58

Red Sea; East Af
58-59

Samoa). — Inc C

Mem. Queensland

not over half pupil and none greater in diameter than width of pale interspaces. In young dark spots comparatively large and greatly fewer. Adult with 4 or 5 dark obscure saddles along back at bases of dorsals, also one may be present as saddle on caudal peduncle above; all saddles appear as if underlaid, though little evident in young. Fins of adult somewhat darker gray terminally. Pectoral sometimes with narrow whitish margin. Iris brown.

India, Bengal Bay, East Indies, Philippines, Melanesia, Micronesia, Polynesia. We follow Boulenger in retaining this species, though *Amak* has merged it with *Serranus fario*

— Luncker and Mohr, Mitteil.
 Naturh. Mus. Hamburg, vol. 41, p. 16,
 1925 (Kewring, Mus., New Heeklenburg;
 Rein Bay and Blanche Bay, Vulcan
 Island, New Pomerania; Friedrich
 Wilhelm Harbor, New Guinea).

Corythoichthys fasciatus Auer, Reise
 Novara, Fische, p. 391, 1865 (Tahiti;
 possibly Chile).

Corythoichthys (Synognathus) fasciatus
Guichenot, Mém. Hist. Nat. Sci.
 Cherbourg, ser. 2, vol. 2, p. 148, 1866
 (Madagascar)

maxillary expansion scaly,
 scales in about 14 transverse
 rows. Scales with 5 to 8 basal
 radiating striae; 8 to 10 apical
 denticles, compact in young,
 absent with age; circuli moderately
 fine.

D. X or XI, 15, I or 16, I, fourth
 spine $2\frac{4}{5}$ to $3\frac{1}{5}$ in total head
 length, first ray $2\frac{1}{2}$ to $3\frac{2}{3}$; A.
III, 8, I, second spine $3\frac{1}{3}$ to $4\frac{1}{2}$,
 fifth ray $2\frac{1}{5}$ to $2\frac{1}{3}$; caudal $1\frac{3}{5}$
 to $1\frac{7}{8}$, convexly rounded behind;
 least depth of caudal peduncle
 $3\frac{3}{5}$ to $3\frac{2}{3}$; pectoral $1\frac{3}{5}$ to $1\frac{4}{5}$;
 ventral $1\frac{9}{10}$ to $2\frac{1}{3}$.

In alcohol light cream or
 brown, little paler below. Body
 and fins everywhere with small
 round blackish spots, largest

Syngnathus conspicillatus Jenyns,
 Voy. Beagle, Zool., p. 147, pl. 27,
 fig. 4, 1842 (type locality, Tahiti).
 — Gunther, Cat. Fish. Brit. Mus.,
 vol. 8, p. 174, 1870 (Zanzibar, Seychelles,
 East Indies, Amboyna, Fiji,
 Micronesia, Aneiteum). — Duméril,
 Hist. Nat. Poiss., vol. 2, p. 544, 1870
 (compiled). — Peters, Monatsber.
 Akad. Wiss. Berlin, p. 447, 1876
 (Mauritius). — Lunel, Mém. Soc.
 Phys. Sci. Nat. Genève, vol. 27, pt. 2,
 p. 291, 1881 (Mauritius). —
Peters, Trans. Roy. Soc. Arts Sci.

— Elera, Cat. Fauna Filipinas, vol. 1,
 p. 597, 1895 (Luzon, Manila, Cebu,
 Puerta Princesa, Paragua).

2, p. 463, 1889. — Garman, Bull.
 Mem. Mus. Comp. Zool., vol. 39, p.

1247

Syngnathus conspicillatus Jenyns,
Voy. Beagle, Zool., p. 147, pl. 27,
fig. 4, 1842 (type locality, Tahiti).
— Gunther, Cat. Fish. Brit. Mus.,
vol. 8, p. 174, 1870 (Zanzibar, Seychelles,
East Indies, Amboyna, Fiji,
Micronesia, Aneiteum). — Duméril,
Hist. Nat. Poiss., vol. 2, p. 544, 1870
(compiled). — Peters, Monatsber.
Akad. Wiss. Berlin, p. 447, 1876
(Mauritius). — Lunel, Mém. Soc.
Phys. Sci. Nat. Genève, vol. 27, pt. 2,
p. 291, 1881 (Mauritius). —
Peters, Trans. Roy. Soc. Arts Sci.
Mauritius, new ser., vol. 11, p. 58,
1883 (Mauritius). — Day, Fishes of
India, Suppl., p. 808, 1888 (Galle, Ceylon).
Fauna British India, Fishes, vol.
2, p. 463, 1889. — Garman, Bull.
New. Mus. Comp. Zool., vol. 39, p.

St. Fisher Brit. Mus., vol. 1, 1895, p. 246
Pillayner, Ceylon, Mauritius, Madagascar,
Borneo, Malay Archipelago.

Mauritius.
1883 (Mauritius)
India, Supp
Fauna Brites
2, p. 463, 18
Mew. Mus

spine at angle, serrae minute or obsolete with age; opercular spines 3, lower little closer to median, upper most advanced. Gill rakers $9 + 16$, lanceolate, robust, little less than gill filaments or $2\frac{3}{5}$ in eye; 9 above and 5 below rudimentary.

Scales 85 to 104 in lateral line to caudal base and 15 to 20 more on latter; tubes 53 to 57 in lateral line to caudal base and 2 or 3 more on latter; 20 scales above lateral line, 25 to 31 below, 80 to 95 predorsal forward nearly to snout tip; 50 rows obliquely over cheek from lower hind eye edge to opercle angle; fins all minutely scaled over greater portions basally; upper $\frac{2}{5}$ of

239, pl. 5, fig. 2, 1903 (3 miles south
Suva lightship). — Günther, Journ.
Mus. Godeffroy, vol. 9, p. 430, 1910
pl. 167, fig. B, 1910 (Pomotu, Micronesia,
Society Islands, Pelew, Aneiteum,
Samoa, Fiji, St. Anna Island, New South Wales)
Corythoichthys conspicillatus Duncker,
Fauna Südw. Austral. Michaelson
and Hartmeyer, vol. 2, ^{pt. 1,} p. 237, 1909, ^(compiled)
Spolia Zeylan., vol. 7, p. 29, 1910.
* Corythoichthys conspicillatus
— Kendall and Radcliffe, Mem. Mus.
Comp. Zool., vol. 26, p. 264, 1911 (Jabut,
Marshall). — Duncker, Mitteil.
Naturh. Mus. Hamburg, vol. 32, p. 73,
1914 (1915) (Micronesia, Pannoto, Tahiti,
Samoa, Pacific Islands). — Fowler,
Proc. Acad. Nat. Sci. Philadelphia,
p. 442, 1921 (Tahiti). — Fowler and
Ball, Bull. Bishop Mus., no. 26, p.
10, 1925 (Wake Island). — Fowler

Depth $2\frac{7}{8}$ to 3; head $2\frac{1}{3}$ to $2\frac{1}{2}$, width $2\frac{1}{6}$ to $2\frac{1}{3}$. Snout $4\frac{3}{4}$ to $5\frac{1}{5}$ in head from snout tip; eye $4\frac{1}{2}$ to $6\frac{1}{2}$, greater than snout in young to $1\frac{2}{5}$ with age, always greater than interorbital; maxillary reaches to or slightly beyond hind eye edge, expansion $1\frac{1}{4}$ to $1\frac{2}{5}$ in eye, length $2\frac{1}{3}$ to $2\frac{2}{5}$ in head from snout tip; teeth villiform, in broad bands in jaws, on vomer and palatines but none on tongue, narrowing to 3 or 2 rows posteriorly in mandible; nostrils together, posterior greatly larger with age or its vertical diameter nearly equals pupil; interorbital 6 to $6\frac{3}{4}$ in head, very slender, convex; hind preopercle edge finely serrate in young, with

1249

and Bean, Proc. U. S. Nat. Mus.,
vol. 71, p. 14, 1927 (Tahiti). —
Fowler, Mem. Bishop Mus., vol. 10,
p. 114, 1928 (Ascension Island,
Society Islands, Faté, Wake
Island, Tahiti).

Syngnathus haematopterus Bleeker,
Nat. Tijds. Ned. Indië, vol. 2, p.
(228) 258, 1851 (type locality, Banda,
Neira); vol. 3, p. 235, 1852 (Amboina),
p. 238 (Wahai); vol. 4, p. 133, 1853
(Ternate); vol. 6, p. 314, 1854
(Larantuka, Flores); vol. 8, p. 307,
1855 (Batoe); vol. 9, p. 66, 1855
(Batoe). — Peters, Archiv Naturg.,
vol. 1, p. 277, 1855 (1856) (Mossambique).
— Bleeker, Nat. Tijds. Ned. Indië,
vol. 10, p. 362, 1856 (Ternate); vol.
11, p. 95, 1856 (Banda); vol. 12, p. 194.

Mus., vol. 1, 1859, p. 149 (copied). —
Meyer, Anales Soc. Españ. Hist. Nat.
Madrid, vol. 14, 1885, p. 9
 (Manado, Celebes).

Epinephelus macrospilus Bleeker,
Atlas Ichth. Ind. Néerl., vol. 7, 1873-76,
 p. 22, pl. (12) 209, fig. 2 (Java, Celebes,
 Batjan, Solor, Amboina).

Serranus howlandi Günther, Journ.
Mus. Godeffroy, vol. 1, pt. 1, 1873, p.
 8, pl. 9, fig. B. Howland Island and
 Tahiti.

Serranus cruentus de Vis, Proc. Linn.
Soc. New South Wales, vol. 8, 1883, p.
 446. New Britain.

1856 (Ternate); vol. 13, p. 386, 1857
 (Batjan); Act. Soc. Sci. Ind. Néerl.
 no. 5, vol. 1, p. 8, 1856 (Amboina);
 vol. 2, no. 7, p. 9, 1857 (Amboina)
 — Günther, Journ. Mus. Godeffroy,
 vol. 9, p. 431, pl. 167, fig. C, 1910
 (Fiji). — Beaufort, Bijdr. Dierk.
 Amsterdam, vol. 19, p. 102, 1913
 (Saonek, Waigiu).

Corythoichthys haematopterus
Bleeker, Verslag. Akad. Wet.
 Amsterdam, vol. 14, p. 97, 1862
 (Ternate).

Serranus miliaris Valenciennes,
Hist. nat. Poiss., vol. 6, 1830, p. 520.
New Guinea.

Serranus altiveloides Bleeker, Verh.
Batav. Genootsch. (Perc.), vol. 22,
1849, p. 38. Batavia. — Günther, Cat.
Fishes Brit. Mus., vol. 1, 1859, p. 127
(copied). — Kner, Reise Novara, Zool.,
vol. 1, pt. 5, 1865, p. 23 (Singapore;
Madras). — Elera, Cat. Fauna Filip.,
vol. 1, 1895, p. 461 (Manila).

Serranus altiveloides Meyer, Anales
Soc. Españ. Hist. Nat. Madrid, vol. 14,
1885, p. 9 (North Celebes).

Epinephelus altiveloides Bleeker,
Atlas Ichth. Ind. Néerl., vol. 7, 1873-
76, pl. (30) 308, fig. 1.

Serranus macrospilos Bleeker, Nat.
Tijds. Ned. Indië, vol. 9, 1855, p. 499.
Batavia. — Günther, Cat. Fishes Brit.

Syngnathus pictus (Hemprich and Ehrenberg) Kaup, Cat. Lophobr. Fish Brit. Mus., p. 25, 1856 (name in synonymy).

Typhlus desjardini Kaup, Cat. Lophobr. Fish Brit. Mus., p. 26, 1856 (name in text) (type locality, Bourbon Island).

Schthyocampus papuensis Sauvage, Bull. Soc. Philom. Paris, ser. 7, vol. 4, p. 228, 1879 (1880) (type locality, Dorey, New Guinea).

— Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 215, 1905 (1906) (reference).

Syngnathus intestinalis Ramsay, Proc. Linn. Soc. New South Wales, vol. 5, p. 494, 1881 (type locality, not given [Solomon Islands]).

~~"The intestinalis, caught at the same place as the Syngnathus" (error).
Ramsay, Proc. Linn. Soc. New South Wales, vol. 5, p. 494, 1881 (compiled).~~

~~Jac. Cuthbert, Biol. Res. Endeavour,~~

Serranus corallicola Valenciennes.

Serranus corallicola (Kuhl and Van Hasselt) Valenciennes, Hist. nat. Poiss., vol. 2, 1828, p. 336. No locality.
— Day, Fishes of India, pt. 1, 1875, p. 20; Fauna British India, vol. 1, 1889, p. 451. — Weber,

Depth $18\frac{1}{4}$ to 21; head 8 to $8\frac{1}{4}$, width $2\frac{4}{5}$ to $3\frac{1}{5}$. Snout $1\frac{3}{4}$ to $1\frac{9}{10}$ in head from snout tip; eye $4\frac{4}{5}$ to $5\frac{1}{2}$, $2\frac{2}{3}$ to $2\frac{3}{4}$ in snout, greater than interorbital; maxillary 4 to $4\frac{1}{5}$ in eye; interorbital $1\frac{1}{4}$ to $1\frac{1}{2}$, concave; strong postocular keel each side above and strong median occipital keel; opercle with strong horizontal ridge.

Rings 15 to 18 + 33 to 37. Upper marginal trunk keel discontinuous with upper marginal caudal keel, not quite reaching end of dorsal fin; median lateral trunk keel ends opposite dorsal origin, not continuous with lower caudal keel; trunk with slight median ventral keel to vent.

716

($12^{\circ}51'30''$ N., $123^{\circ}26'15''$ E.). March 11, 1909. In 226 fathoms. Length 78 to 86 mm.

[D. 5365] 3228, 3229, 4004 to 4008. Cape Nantiago Light, N. 73° W., 6.7 miles ($13^{\circ}44'24''$ N., $120^{\circ}45'30''$ E.), Balayan Bay, Luzon. February 22, 1909. In 214 fathoms. Length 42 to 86 mm. (Type no. 4006, no. U.S.N.M.)

[D. 5110] 4479. Corregidor Light, N. 20° E., 25.5 miles ($13^{\circ}59'20''$ N., $120^{\circ}75'45''$ E.), southern Luzon. January 15, 1908. In 135 fathoms. Length 72 mm.

[D. 5292] 2 examples. Escudero Light, N. 36° W., 3.25 miles ($13^{\circ}28'45''$ N., $121^{\circ}01'12''$ E.), southern Luzon. July 23, 1908. In 162 fathoms. Length 56 to 67 mm.

[D. 5411] 4182. Lavis Point Light, N. 35° E., 4.7 miles ($10^{\circ}10'30''$ N., $123^{\circ}51'15''$ E.), between Cebu and Bohol. March 23, 1909.

D. 25 to 32, on 16 rings,
height $2\frac{2}{3}$ to $2\frac{4}{5}$ in head; A.
rings 3 or 4; caudal length
 $2\frac{1}{2}$ to $2\frac{3}{5}$ in head; pectoral
rays 14 to 18, fin $4\frac{1}{3}$ to 5 in head.

Pale brown, gray white or
white about edges. Black line
along each side of head below.
Black blotch behind eye and
another on hind opercle end.
Snout with small dusky to
blackish spots above. Iris
white, black median horizontal
line. Side with 14 transverse
blackish brown blotches, first
9 as pairs, also reflected
across back and tail above.
Chest or ventral surface of
first 3 rings with ^{no} many pairs
of black blotches. Otherwise

715

[D. 5536] 2051 and 2052. Apo Island,
S. 26° W., 11.8 miles ($9^{\circ} 15' 45''$ N., 123°
 $22' 00''$ E.), between Negros and
Siquijor. August 19, 1909. In 279 fathoms.
Length 75 to 88 mm. 3 examples.

[D. 5537] 1541 and 1542. Apo Island,
S. 46° W., 8.7 miles ($9^{\circ} 11' 00''$ N., $123^{\circ} 23'$
 $00''$ E.). August 19, 1909. In 254 fathoms.
Length 77 to 87 mm. 6 examples.

[D. 5538] 2968 and 2971. Apo Island,
S. 64° W., 7.3 miles ($9^{\circ} 08' 15''$ N., $123^{\circ} 23'$
 $20''$ E.). August 19, 1909. In 256 fathoms.
Length 80 to 82 mm.

[D. 5387] 3702 and 3703. Pagatāo
Island Light (outer), S. 80° E., 27 miles
($12^{\circ} 54' 40''$ N., $123^{\circ} 20' 30''$ E.), between
Burian and Luzon. March 11, 1909.
In 209 fathoms. Length 73 to 74 mm.

[D. 5388] 3764 and 3766. Pagatāo
Island Light (outer), S. 86° E., 27 miles

trunk and tail below-uniform.
Fins uniformly pale.

Red Sea, Zanzibar, Mauritius,
Bourbon, Madagascar,
Mozambique, Seychelles,
India, Ceylon, East Indies,
China, Kiu Kiu, Japan,
Queensland, New South Wales,
Philippines, Melanesia,
Micronesia, Polynesia. A
quite variable species, though I
cannot find that Corythoichthys
conspicillatus genus is really
distinct. According to Weber
and Beaufort "The only real
difference seems to be that
its snout is still more slender
and conspicuously less than half
the length of the head".

edge of spine antroscely serrate.

Brown with drab gray to lavender tints above, sides and below paler with silvery white reflections. Iris pale yellowish white. Fins all pale, dorsals and caudal tinged dusky and spinous dorsal becomes dusky black terminally.

Philippines.

Syngnathus intestinalis Macleay,
 Proc. Linn. Soc. New South
 Wales, ~~vol. 5, pt. 2, p. 292, 1882~~ vol. 6,
 pt. 2, p. 292, 1882 (reference).

Corythoichthys intestinalis McCulloch,
 Proc. Linn. Soc. New South Wales, vol.
 35, p. 307, 1910 (Cavins Reef, Cookstown,
 North Queensland); Biol. Res.

Endeavour, vol. 1, pt. 1, p. 26, fig. 10,
 December 22, 1911 (types said to
 be from Bougainville Island,
 Solomons).

Corythoichthys intestinalis Ogilby,
 Mem. Queensland Mus., p. 90, December
 10, 1913 (Darnley Island) (error).

to preopercle ridge.

D. XII, 13 or 14, fourth spine $2\frac{1}{8}$ in total head length, first ray $2\frac{7}{8}$; A. III, 13, second spine $2\frac{2}{5}$, first ray $3\frac{2}{5}$; caudal 1, forked, upper lobe usually longer; least depth of caudal peduncle $2\frac{4}{5}$; pectoral 1; ventral $1\frac{3}{5}$.

Grayish silvery, fine dots on scales, forming lines along center of each row. Black blotch with silvery lower border, lost with age, on lateral line between end of soft dorsal and caudal base. Dark spot at pectoral base. Fins blackish, except flesh colored pectoral and orange tinted caudal. Eyes golden. Young with narrow vertical brown lines on body. Length 305 mm. (Day.)

Red Sea, Madagascar, Arabia, India. It appears hardly likely Sargus bootschyi

~~Vol. 46, p. 46, 1914.~~

1253

Corythoichthys isigakius Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 24, p. 7, pl. 5, 1901 (1902) (type locality, Yaeyama, Riu Kiu). — Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 494, 1912 (Okinawa). — Jordan, Yanaka, Snyder, Journ. College Sci. Tokio, vol. 33, p. 97, 1913 (Ishigaki, Nagasaki, Hameda).

Corythoichthys waitii Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 212, fig. 17, 1905 (1906) (type locality, Samoa). — Seale, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 17, 1906 (Faté, New Hebrides). — McCulloch, Proc. Linn. Soc. New South Wales, vol. 35, p. 1910 (Carins Reef, off Cooktown).

soft dorsal, all extending ^{on} dorsal
fin. Also fifth transverse dark
brown band on caudal peduncle.
Caudal and pectoral mottled with
paler brown. Ventral and anal
dusky brown.

China, Formosa, Korea, Japan, Riu
Kiu. Reported by Elera from the
Philippines. The above description
from a Japanese example in the
U. S. National Museum obtained by
E. S. Morse in 1878, length 127 mm.

Corythoichthys sealei (Jordan and Starks) Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 213, fig. 18, 1905 (1906) (type locality, Apia, Samoa).
— Seale, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 17, 1906 (Fate, New Hebrides).

Corythoichthys elerae Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 57, fig. 2, 1906 (1907) (type locality, Bacan, Philippines).

~~? Syngnathus crenulatus Weber, Siboga Exped., vol. 57, Fische, p. 108, fig. 35, 1913 (type locality, Island Binonga, south of Celebes).~~

caudal base and 5 more on latter;
 17 scales above lateral line, 28
 below, 58 predorsal forward to front
 nostrils, about 20 rows across
 cheek to preopercle angle; maxillary
 scales. Vertical fin all more or
 less finely scaled. Scales with 4 or 5
 basal radiating striae; apical 18 to 20
 denticles, slender, 4 or 5 series
 transversely; circuli rather coarse.

D. XI, 15, I, third spine $2\frac{2}{5}$ in total
 head length, first ray $2\frac{2}{5}$; A. III, 8, I,
 second spine $3\frac{3}{5}$, third ray $2\frac{1}{8}$; caudal
 $1\frac{2}{3}$, convex behind; least depth of
 caudal peduncle $3\frac{1}{5}$; pectoral $1\frac{1}{2}$;
 ventral $1\frac{7}{8}$.

Largely uniform brownish. Two
 pairs of broad darker brown bands
 on body transversely, first from
 spinous dorsal and second from

The species is quite handsome and with the contrasted dark bars on the throat of the male, less prominent, more as spots and with more reticulate markings. Though always contrasted these markings are very variable.

Scales 26 to 28 in lateral line to caudal base and 2 more on latter, 2 above, 7 below, 5 predorsal, 2 little distinct ^{fins all more or less scaly, at least basally;} rows on cheek; ^{Tubes in} lateral line large, simple, well exposed, each without basal scale. Scales very cartilaginous, mostly all fallen; 11 to 14 basal radiating striae; circuli fine.

D. IX - I, 9, I, second spine with front edge antroscely serrate, third spine $1\frac{7}{8}$ to $2\frac{1}{4}$ in total head length, first branched ray $2\frac{3}{5}$ to $3\frac{1}{4}$, also spine of soft dorsal with front edge antroscely serrate; A. II, 7, I, second spine $2\frac{1}{2}$ to $3\frac{1}{8}$, first branched ray $2\frac{2}{5}$ to $2\frac{4}{5}$, front edge of second spine antroscely serrate; caudal $1\frac{1}{2}$ to $1\frac{2}{3}$, deeply emarginate; least depth of caudal peduncle $3\frac{2}{3}$ to 4; pectoral $1\frac{3}{5}$ to $1\frac{3}{4}$; ventral $1\frac{3}{5}$ to $1\frac{2}{3}$, front

1259

Two examples. Bolalo Bay,
Palawan. December 21, 1908. Length
72 to 83 mm.

• One example. Busin Harbor,
Burias Island. April 22, 1908.
Length 80 mm.

19973. Cebu market. September 3,
1909. Length 120 to 146 mm.

Eight examples. Cebu market.
March 22, 1909. Length 98 to 130 mm.

Five examples. Cebu market.
March 13, 1909. Length 44 to 104 mm.

Two examples. D. 5340. Cone Island,
N. 2° E., 1.5 miles (lat. $10^{\circ}55'51''$ N.,
long. $119^{\circ}14'12''$ E.), Malampaya
Bank, Palawan. December 21,
1908. Length 35 to 43 mm.

Two examples. Zolo. February 7,
1908. Length 53 to 58 mm.

Depth 3 to $3\frac{1}{8}$; head $2\frac{2}{5}$ to $2\frac{3}{5}$, width $2\frac{2}{5}$ to $2\frac{1}{2}$. Snout 4 to 5 in head from snout tip; eye 3 to $3\frac{2}{5}$, greater than snout or interorbital; maxillary reaches opposite middle of eye, expansion $2\frac{1}{5}$ to $2\frac{2}{5}$ in eye, length $2\frac{1}{4}$ to $2\frac{1}{3}$ in head; bands of minute villiform teeth in jaws, on vomer and palatines, pair of moderately small canines in front of each jaw, with lower much smaller and closer, also 3 or 4 lateral mandibular canines each side; interorbital $3\frac{1}{5}$ to $3\frac{1}{2}$, very slightly convex; preopercle ridge vertically entire and 5 or 6 or more denticles along horizontal portion below angle; preopercle edge denticulate, fine on vertical edge and coarser below angle; preorbital entire. Gill rakers 5 + 15, lanceolate, longer than gill filaments or $2\frac{1}{4}$ in eye.

(Twelve) examples. Jolo. September 16, 1907. Length 58 to 63 mm.

One example. Limbonex Cove, Luzon. January 14, 1908. Length 43 mm.

One example. Maculabo Island, tidepools. June 4, 1907. Length 60 mm.

One example. Masinloc Bay, Zimbalas, Luzon. November 22, 1908. Length 74 mm.

One example. Apol. August 4, 1907. Length 52 mm.

Thirty^{four} examples. Pandanon Island. March 24, 1909. Length 10³ to 150 mm.

[1464.]

Two examples. Pascual, Burian Island. March 7, 1909. Length 76 to 78 mm.

30 examples. Fort Dupon, Leyte. May 6, 1908. Length 38 to 68 mm.

Synagrops serratospinosa Smith and Radcliffe
Synagrops serratospinosa Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 41, 1912, p. 444, pl. 38,
fig. 2. Batangas Bay, Luzon (N. Lat. $13^{\circ}44'$
 $24''$ E. Long. $120^{\circ}45'30''$, in 214 fathoms).

Five examples. Port Janelo, Luzon.
July 12, 1905. Length 134 to 165 mm.

20145. Port Matalvi, Luzon.
November 22, 1908. Length 107 mm.

One example. Port Matalvi.
November 23, 1908. Length 74 mm.

Eight examples. Reefs opposite
Cebu. April 7, 1908. Length 50 to 96 mm.

Two examples. Ramblon.
March 25, 1908. Length 70 to 93 mm.

One example. San Miguel Harbor,
Ticao Island. April 21, 1908. Length
52 mm.

One example. Simaluc Island, tide.
September 22, 1909. Length 54 mm.

13144 [339]. Tuminiao Island.
February 26, 1908. Length 116 mm.

[D. 5545.] Noble Point, Tulayan ~~Point~~
Island, S. 19° W. 3 miles. September
15, 1909. 9 examples. Length 65 to 97 mm.

44428 U.S.N.M. Bengal Bay.
Steamer Investigator. Indian
Museum. Length 75 to 83 mm.
Six examples. In Parascambrops
pellucidus.

Twelve examples. Varadero Bay,
Hindoro. July 23, 1908. Length 97 to
150 mm.

Three examples. Varadero Bay.
Harbor, Hindoro. July 22, 1908.
Length 60 to 72 mm.

13311. Ambonia market. December
7, 1909. Length 137 mm.

U.S.N.M., no. 55908. Båen, Forøyen.
Bureau of Fisheries 3944 (10771).
C. J. Pearson. Length 121 mm. Type of
Corythoichthys clerae.

[D. 5517.] Point Tagolo Light, S. 83°
W. 10.5 miles. August 9, 1909. 13 examples.
Length 69 to 88 mm.

[D. 5518.] Point Tagolo Light, S. 64°
W. 8.7 miles. August 9, 1909. 4 examples.
Length 88 to 98 mm.

[D. 5519.] Point Tagolo Light, S. 71° W.
8.7 miles. August 9, 1909. 13 examples.
Length 72 to 96 mm.

¹⁵⁴⁰₁ 1543 [D. 5537.] Apo Island, S. 46°
W. 8.7 miles. August 19, 1909. Length
105 to 115 mm.

2969, 2970 [D. 5538.] Apo Island, S. 64°
W. 7.3 miles. August 19, 1909. Length
112 to 114 mm.

1263

Corythoichthys crenulatus (Weber).

Syngnathus crenulatus Weber,
Siboga Exped., vol. 57, Fische, p. 109,
fig. 35, 1913 (type locality, Island
Binongha, south of Celebes). —

Corythoichthys crenulatus Weber
and Beaufort, Fishes Indo Austral.
Archip., vol. 4, p. 72, fig. 30, 1922
(Samarang; type; Kupang).

Depth 24 or 25; head 7 or 8, width $3\frac{3}{4}$ to $3\frac{4}{5}$. Snout $1\frac{4}{5}$ to $2\frac{1}{4}$ in head from snout tip; eye 6 to $6\frac{3}{4}$, 3 to $3\frac{1}{4}$ in snout, greater than interorbital; maxillary $\frac{3}{4}$ to $\frac{4}{5}$ of eye; interorbital $1\frac{1}{3}$ to $1\frac{2}{5}$ in eye, concave; opercle with complete horizontal keel.

Rings 13 or 14 + 37 to 43, with keels all finely serrated and ending in well developed spine behind. Upper trunk keel discontinuous with upper caudal keel; lower trunk keel and lower caudal keel continuous; median lateral trunk keel and median ventral trunk keel discontinuous or terminate at tail.

D. 26 to 30, on 1+6 rings, high, 1 to 2 times eye; A. 1 or 2;

or predorsal, 2 rows on cheek;
 head naked, except cheeks and
 opercles. Tubercles in lateral line
 each large, well exposed and with
 small crinoid basal scale to
 each. ^{Scales with} 13 to 19 basal radiating striae;
 87 to 108 apical denticles, with 2 or
 3 series transversely; ~~none~~ circuli
 fine.

D. VI - I, 9, I, second spine $1\frac{7}{8}$ to 2
 in total head length, third ray $1\frac{2}{5}$ to
 $1\frac{4}{5}$; A. II, 8, I, second spine $2\frac{2}{3}$ to
 3, third ray $1\frac{3}{5}$ to $1\frac{3}{4}$; caudal 1 to $1\frac{1}{10}$,
 well forked; least depth of caudal
 peduncle $2\frac{3}{5}$ to $2\frac{4}{5}$; pectoral
 $1\frac{1}{3}$ to $1\frac{1}{2}$; ventral $1\frac{1}{2}$ to $1\frac{3}{5}$.

Light brown, lighter below.
 Iris neutral rosy gray. Fins all
 pale or whitish.

1265

caudal $1\frac{1}{4}$ in snout; pectoral rays
13 or 14, equals eye.

Light brown generally. Tail
usually with 5 to 10 dark rings,
each ring extending over from 2 to
6 rings. Dark bar each side of
snout. Iris slate. Dorsal and
pectoral pale. Caudal blackish.

Although previously only known
from a small specimen 61 mm
long from Java and Timor, the
materials included below all
appear to suggest this species.
It is quite rough to the touch
and apparently very variable,
at least the preserved materials
often showing contrasted color
markings:

Depth $2\frac{3}{4}$ to $2\frac{7}{8}$; head $2\frac{2}{3}$ to $2\frac{1}{2}$, width 2 to $2\frac{1}{8}$. Snout $4\frac{1}{2}$ to 5 in head from snout tip; eye 3 to $3\frac{1}{4}$, greater than snout or interorbital; maxillary reaches opposite hind eye edge, expansion $1\frac{4}{5}$ to $1\frac{7}{8}$ in eye, length $1\frac{7}{8}$ to 2 in head; teeth villiform, in bands in jaws, on vomer and palatines; interorbital $4\frac{7}{8}$ to $5\frac{1}{2}$, nearly level; infraorbital and postorbital edges, preopercle ridge and edge serrated, ^{and supraorbital edge serrated with age.} Gill rakers 5 + 14, of which 2 upper ones rudimentary and others lanceolate, little longer than gill filaments or $2\frac{1}{2}$ in eye.

Scales 23 or 24 in lateral line to caudal base and 4 or 5 more on latter, 2 above, 6 below, 5

4 examples. Aturayan Bay, Luzon.
June 17, 1909. Length 46 to 62 mm.

5 examples. Balumban, Cebu.
April 7, 1908. Length 48 to 50 mm.

1 example. D. 5530. Balicasag
Island (C.), N. 32° E., 4.3 miles
(lat. $9^{\circ} 26' 45''$ N., long. $123^{\circ} 38' 30''$
E.), between Siquijor and Bohol
Islands. August 11, 1909. Length
52 mm.

13 examples. Busin Harbor, Burias
Island. April 22, 1908. Length 37 to
55 mm.

One example. D. 5196. Capitanillo
Light, N. $5^{\circ} 30'$ W., 14.30 miles (lat.
 $10^{\circ} 44' 30''$ N., long. $124^{\circ} 07' 30''$ E.),
off northern Cebu Island. April 3,
1908. Length 48 mm. tail end broken.

1 example. Putanigan Bay, Masbate.
April 19, 1908. Length 48 mm.

Amia cardinalis Seale

Amia cardinalis Seale, Philippine Journ. Sci.,
vol. 4, no. 6, 1909, p. 509. Puerto Princesa,
Palawan Island.

1267

One example. Zolo. March 3, 1908.
Length 43 mm.

One example. Zolo. March 5, 1908.
Length 51 mm.

Fourteen examples. Zolo. September
16, 1909. Length 52 to 62 mm.

Two examples. D. 5232. Limasawa
Island (S.), S. 69° E., 20.60 miles
(lat. 10° 00' 45" N., long. 124° 44' 06" E.),
between Bohol and Leyte. May 7,
1908. Length 47 or 48 mm.

One example. Looe Bay Anchorage,
vicinity southern Luzon. July 18, 1908.
Length 30 mm.

Four examples. Mansalay, Mindoro.
June 3, 1908. Length 43 to 54 mm.

Eleven examples. Muricaban Point.
July 20, 1908. Length 50 to 66 mm.

Five examples. Musbate. April 20,
1908. Length 51 to 65 mm.

In preserved examples - after very caducous scales fall from young breast, belly and lower surface of tail thickly dotted with dusky, though dotted area not extending above base of pectoral.

Gulf of Oman, Natal, India, East Indies, Philippines, Japan. We fail to find the nominal Syngnops splendens Lloyd and Ceropoma cynodon Regan, differing in any specific way from our other materials. The distinctions given are largely of minor importance. Regan's fish was larger, or 165 mm. long.

1268
2 examples. Murciago Bay,
Mindanao. August 20, 1907. Length
33 to 35 mm.

One example. Rato Anchorage, Luzon.
June 18, 1907. Length 50 mm.

One example. Clangafo, Luzon.
January 7, 1908. Length 34 mm.

One example. Panabutan Bay,
Mindanao. February 5, 1908. Length
45 mm.

Three examples. Port Binanga,
January 8, 1908. Length 43 to 49 mm.

Thirteen examples. Port Dupon,
Leyte. May 6, 1908. Length 44 to 51 mm.

Nine examples. Port Dupon.
March 17, 1907. Length 57 to 57 mm.

One example. Port Matubi, Luzon.
November 23, 1908. Length 46 mm.

Two examples. Rara Island Anchorage,
Luzon Gulf, Luzon. June 18, 1907.
Length 55 to 60 mm.

4 above, 11 below, 10 to 13 predorsal, 3 or 4 rows on cheek; head more or less scaly except muzzle; scales largest along middle of side of body, all rather narrowly imbricated; lateral line of large short tubes, each well exposed; 6 basal radiating striae, 12 to 23 short irregular apical points and circuli fine.

D. VIII, I, 10, I, third spine $2\frac{2}{5}$ to $2\frac{1}{2}$ in total head length, first ray $2\frac{1}{5}$ to $2\frac{1}{4}$; A. III, 7, I, third anal spine $3\frac{3}{4}$ to $4\frac{4}{5}$, first ray $2\frac{3}{5}$ to $2\frac{3}{4}$?; caudal $1\frac{3}{5}$ to $1\frac{2}{3}$, well forked; least depth of caudal peduncle $3\frac{2}{5}$ to $5\frac{1}{2}$; pectoral $1\frac{1}{2}$ to $1\frac{3}{5}$; ventral $2\frac{1}{4}$ to $2\frac{1}{3}$.

Back brown, below whitish and body everywhere with silvery white sheen. Fins all pale brownish.

28 examples. Romblon. March 25,
1908. Length 35 to 56 mm.

Six examples. San Miguel Harbor,
Ticao Island. April 21, 1908.

Length 30 to 53 mm.

Four examples. D. 5573. Simeluc
Island (N.), S. 86° E., 0.4 miles
(lat. $5^{\circ}28'30''$ N., long. $120^{\circ}13'00''$ E.),
north of Tawi Tawi. September 22,
1909. Length 47 to 57? mm.

Three examples. D. 5568. Singaan
Island (N.), West, 0.9 mile (lat.
 $5^{\circ}45'50''$ N., long. $120^{\circ}26'00''$ E.),
north of Tawi Tawi. September 21,
1909. Length 58 to 63 mm.

One example. Taal Anchorage.
February 20, 1907. Length 58 mm.

Depth $3\frac{1}{4}$ to $3\frac{1}{2}$; head $2\frac{1}{4}$ to $2\frac{2}{5}$, width $2\frac{2}{5}$ to $2\frac{4}{5}$. Snout $4\frac{1}{4}$ to $4\frac{1}{3}$ in head from snout tip; eye 3 to $3\frac{1}{2}$, greater than snout or interorbital; maxillary $2\frac{1}{3}$ to $2\frac{2}{3}$ in head, reaches slightly beyond front of eye, expansion $2\frac{1}{4}$ to $2\frac{1}{3}$ in eye; teeth fine, villiform, in bands in jaws, on vomer and palatines; inner pair of upper front canines and smaller close set symphyseal pair, both pairs directed inward; interorbital level, 5 to $5\frac{1}{5}$ in head; preopercle edge and ridge entire, also preorbital. Gill rakers 6 + 12, lanceolate, slender, little longer than gill filaments or $2\frac{1}{5}$ in eye.

Scales 44 or 45 in lateral line to caudal base and 4 more on latter,

One example. D. 5562. Tatum
Point (Zolo), N. 87° E., 17.2 miles
lat. $5^{\circ}54'20''$ N., long. $121^{\circ}13'12''$ E.),
Zolo Island and vicinity.

September 19, 1909. Length 60 mm.

Two examples. Varadero Bay,
Verde Island. July 20, 1908.
Length 36 to 38 mm.

55 examples. Varadero Harbor.
July 22, 1908. Length 32 to 58 mm.

Eight examples. Varadero Harbor.
July 23, 1908. Length 38 to 55 mm.

Two examples. D. 5595. Zamboanga
Light N. 31° W., 0.1 miles (lat. $6^{\circ}54'$
 $00''$ N., long. $122^{\circ}04'30''$ E.), off
Zamboanga, Mindanao. October 1,
1909. Length 28 to 40 mm.

Fisher. Marine Biol. Surv. South
Afr., No. 2, 1921 (1922), p. 69 (off
South Africa, in 150 to 230 fathoms).
— Barnard, Ann. South Afr. Mus.,
vol. 21, pt. 2, 1927, p. 529 (Natal
Coast, in 130 to 230 fathoms).

One example. Gane Road, Gillolo Island. April 1, 1909. Length 50 mm.

One example. Tifu Bay, Bouro Island. December 10, 1909. Length 57 mm.

Aeropoma japonicum Günther

Aeropoma japonicum Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 250. Nagasaki. (On Schlegel); Rep. Voy. Challenger, vol. 1, 1880, p. 38 (Arafura Sea). —

Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, 1901, p. 912, fig. 10 (Wakanoura and Misaki). —

Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, 1925, p. 231 (Wakanoura).

— Fowler, Journ. Bombay Nat. Hist. Soc., 1927, p. 259 (Bombay).

Synagrops splendens Lloyd, Mem. Indian Mus., vol. 2, no. 3, 1909, p. 159 (pl. 47, fig. 5). (Gulf of Oman, in 230 fathoms).

Aeropoma cynodon Regan, Ann. Mag. Nat. Hist. London, ser. 9, vol. 7, 1921, p. 415. Off Natal. — Gilchrist,

~~Corythoichthys~~
~~Syngnathus~~ preciliatus (Peters) 1272

Syngnathus preciliatus Peters,
Monatsb. Akad. Wiss. Berlin, p. 458,
1868 (1869) (type locality, Adelaide, South
Australia). — Günther, Cat. Fish.
Brit. Mus., vol. 8, p. 174, 1870
compiled. — Duméril, Hist. Nat.
Poiss., vol. 2, p. 552, 1870 (compiled).
— Macleay, Proc. Linn. Soc. New
South Wales, vol. 6, p. 290, 1881
South Australia. — Duncker,
~~Handb. Naturh. Australiens~~ Michaelson
~~et al. Martens, vol. 2, p. 295, 1892~~
Mitteil. Naturh. Mus. Hamburg,
vol. 32, p. 82, 1914 (1915) (Barrow
Island, Western Australia;
Adelaide?). — White and Hale,
Rec. South Australian Mus., vol. 1,
no. 4, p. 295, fig. 39, January 27, 1921
(Spencer Gulf; St. Vincent's Gulf).

Grammistes sexlineatus (Thunberg).

Perca sexlineata Thunberg, Kon. Vet.
Akad. Handl. Stockholm, vol. 13, 1792,
p. 142, pl. 5. Åbbor slagtet.

Bodianus sexlineatus Lacépède, Hist. Nat.
Poiss., vol. 4, 1803, pp. 285, 302 (collection
de Museum national d'histoire naturelle).

Centropomus sexlineatus Lacépède, Hist.
Nat. Poiss., vol. 5, 1802, pp. 688, 689
(East Indies).

Grammistes sexlineatus Klunzinger, Fische
Roth. Meer., 1884, p. 10. — Boulenger,
Cat. Fishes Brit. Mus., vol. 1, 1895, p. 346
(Zanzibar, Mauritius, Ceylon, Formosa,
Philippines, Sumatra, Ambon, Mysol,
Australia, Solomons, Lineatum). —

Jordan and Seale, Bull. Bur. Fisher.,
vol. 25, 1905 (1906), p. 260, pl. 38, fig. 2
(Upia, Samoa). — Evermann and Seale,

Syngnathus poecilolaemus Castelnau,
Proc. Zool. Acclimat. Soc. Victoria,
vol. 2, p. 78, 1873 (South Australia). ¹²⁷³

Syngnathus poecilolaemus Buncker,
Trans. Südw. Austral. Michaelson
and Hartmeyer, vol. 2, ^{pt. 1,} p. 245, 1901.
(Barrow Island; Adelaide).

Corythoichthys poecilolaemus
McCulloch, Rec. Western Australian
Mus., vol. 1, no. 2, p. 82, fig. 2, 1912.
(Fremantle).

Corythoichthys poecilolaemus
McCulloch, Mem. Austral. Mus.,
no. 5, pt. 1, p. 87, June 29, 1929
(reference).

partly naked, scaly on sides. Lateral line complete, tubes straight.

Dorsal spines 6 or 7, rays 13 to 15, spinous fin long as or little shorter than soft fin. Anal without distinct spine, rays 10 or 11. Caudal rounded. Pectoral rays 17, partly symmetrical, rounded. Ventral with short spine, fins close together in advance of pectoral.

Indian and western tropical Pacific Ocean.

Head $7\frac{2}{5}$ in total, $2\frac{2}{5}$ to vent.
 Snout $1\frac{2}{3}$ in head; eye 8, $4\frac{1}{2}$
 in snout; snout above with low
 median crest to interorbital,
 another from top of snout nearly
 to nostrils; supraorbital ridge
 begins eye diameter before eye,
 also behind same space; occipital
 and nuchal ridges low; opercle
 with slightly raised reticulating
 lines and prominent median
 ridge.

Rings 19 or 20 + 44 to 49; little
 deeper than broad, keels well
 defined. Upper trunk keel reaches
 sixth caudal ring; median lateral
 keel ends on last body ring below
 origin of upper caudal keel,
 which begins on side and reaches
 sixth caudal ring; lower lateral
 trunk and caudal ridges continuous;
 ventral trunk ridge present.

1275

Brood pouch on 16 to 18 caudal rings.

D. 26 to 29, on 1 or 2 trunk and 5 or 6 caudal rings; A. rays 3; caudal 10; pectoral 11 or 12, long as eye with head.

Male, light yellowish brown, with irregular vertical bars or mottlings on snout, under side of snout and head pale. Body brown, darker above, 13 large dark brown spots on back between nape and caudal. Front edge of front caudal scutes with large, dark brown mark, intensity diminishing backwards and disappears at eighth and ninth caudal scutes. Other irregular and scattered markings on tail. Brood pouch milky white, with 2 dark streaks on each side. Female with lower half of snout, throat

and neck marked with small dark¹²⁷⁶
brown dots, not present in male.

Length 270 mm. (Waite and Hale.)

Western Australia, South
Australia.

~~Corythoichthys~~
~~Syngnathus philipi~~ (Lucas)

1277

Syngnathus philipi Lucas, Proc.

Roy. Soc. Victoria, ser. 2, vol. 3, p.
12, ^{April} 1891 (type locality, Port Phillip
Heads, Victoria).

— Linckes, Anna Südwest Austral.,
Michaelson and Hartmeyer, vol. 2, ^{pt. 1},
^(Spencer Gulf; Port Phillip)

Corythoichthys philipi McCulloch, Biol.
Res. Endeavour, vol. 1, pt. 1, p. 26, fig.
10, 1911 (Oyster Bay, Tasmania).

— Linckes, Mittel. Naturh. Mus.
Hamburg, vol. 32, p. 82, 1914 (1915)
South West and South Australia;
Tasmania). — Waite and Hale,

Rec. South Australian Mus., vol.
1, no. 4, p. 217, fig. 40, January 21,
1921 (Spencer; St. Vincent Gulf).

→ Corythoichthys philipi McCulloch, Mem.
Austral. Mus., no. 5, pt. 1, p. 87, June 27, 1929
(reference).

Grammistes orientalis Schneider,
 Syst. Ichth. Bloch, 1801, p. 187. East
 Indies. — Cuvier, Hist. Nat. Poiss., vol. 2,
 1828, p. 203, pl. 27 (East Indies, heros
 Banks). — Guerin, Iconogr. Règne Animal,
 Poiss., 1829-44, p. 5, pl. 1, fig. 2 (East Indies).
 — Peters, Arch. Naturges., 1855, p. 235
 (Mozambique). — Günther, Cat. Fishes
 Brit. Mus., vol. 1, 1859, p. 171 (Mauritius,
 Philippines, Indian Ocean, Australia).
 — Guichenot, Notes Ile Réunion, vol. 2,
 1862, p. 23. — Playfair, Fishes of Zanzibar,
 1866, p. 14 (Zanzibar). — Klunzinger, Verh.
 zool. bot. Gesell. Wien, vol. 20, 1870, p. 707
 (Koseir, Red Sea). — Günther, Cruise of
 Curacoa, Brechley, 1873, p. 410 (Misol,
 Moluccas); Journ. Mus. Godeffroy, vol.
 1, pt. 1, 1873, p. 10 (Guamotua, Kingamilly).
 — Bleeker, Atlas Ichth. Ind. Néerl.,
 vol. 7, 1873-76, p. 670, pl. (59) 337, fig. 5

1278

Head 8, 3 to vent. Snout $1\frac{9}{10}$
in head, narrow, with low
median crest to interorbital,
low ridge from front end to nostril;
eye $7\frac{9}{10}$ in head, $3\frac{2}{5}$ in snout,
strong supraorbital ridges reach
behind eye equal to eye diameter,
or below upper trunk keel; long
occipital keel; nuchal keel
reaches hind edge of second body
ring; opercle with granular
radiating striae and prominent
median keel.

Rings 18 to 20 + 40 to 48;
deeper than wide at trunk;
keels well defined. Upper trunk
keel ends at fifth caudal ring;
median lateral keel reaches
on last trunk ring below origin
of upper caudal keel; lower
trunk keel and lower caudal keel
continuous; strong median ventral

1279

trunk keel to vent. Brood pouch
on 0 or 1 trunk ring and 15 to 18
caudal rings.

D. 22 to 28, on 1 or 2 trunk and
5 or 6 caudal rings; A. rays 2 or 3,
minute; pectoral 10 to 12; caudal
10.

Male with head brown above,
with white mottlings. Opercle
with 5 white dots along keel,
smaller posteriorly. Chin opalescent,
with white markings. Body brown
above, lighter below. Back with
16 pairs of irregular whitish spots
between nape and tail end. Upper
half of each ring of trunk with
brown bar. Front part of lower
trunk keel with row of 7 white
spots, decreasing backward.
Ventral trunk ridge black.
Brood pouch whitish, streaked with
brown. Subcaudal rings light
brown with dark brown spot on

each side of front edges. Caudal dusky. Female with upper side of head and snout pale brown, darker on occiput, row of dark brown dots each side below from front part of snout to end of opercular ridge; 2 dots below hind eye edge; 3 irregular rows of dark spots on front ventral surface of body. Length 130 mm.
(Waite and Hale.)

Western Australia, South Australia, Victoria.

Corythoichthys sauragei Whitley

Corythoichthys sauragei Whitley, Rec.
Austral. Mus., vol. 17, no. 3, p. 117,
June 27, 1929 (on Saurage) — McCulloch,
Mem. Austral. Mus., vol. 5, pt. 1, p. 86,
June 29, 1929 (reference).

Syngnathus modestus (not Günther
1870) Saurage, Bull. Soc. Philomath.
Paris, ser. 7, vol. 3, p. 209, 1879 (type
locality, Noble Island near Howick
Group, Great Barrier Reef, Queensland).
— Duncker, Fauna Südw. Austral.
Michaelson and Hartmeyer, vol. 15,
pt. 1, ~~1909~~ ^{Noble Island}, p. 246, 1909; Jahrb.
Hamburg Wiss. Anst., vol. 32, p. 86,
1915 (Noble Island).

Serranus awoara Schlegel.

Serranus awoara Schlegel, Fauna Japon.,
Poiss., pt. 1, 1845, p. 9, pl. 3, fig. 2. Japan.
— Richardson, Ichth. China Jap., 1846,
p. 231 (Japan). — Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 150 (China). —
Kner, Reise Novara, Zool., vol. 1, pt. 5,
1865, p. 26 (Singapore). — Steindachner
and Döderlein, Denksch. Akad. Wiss. Wien,
vol. 47, pt. 1, 1883, p. 23 (Tokyo and China
Sea). — Elera, Cat. Fauna Filip., vol. 1,
1895, p. 46 (Luzon, Cavite, Santa Cruz).
Epinephelus awoara Bleeker, Atlas
Ichth. Ind. Néerl., vol. 7, 1873⁷⁶, p. 59 (on
Kner). — Boulenger, Cat. Fishes Brit. Mus.,
vol. 1, 1895, p. 230 (China). — Jordan and
Snyder, Annot. Zool. Japon., vol. 3, 1901, p.
94 (Nagasaki and Riu Kiu). — Jordan and
Richardson, Mem. Carnegie Mus., vol. 6, no. 4,

Corythoichthys poecilolaemus (not
Peters) McCulloch and Whitley, Mem.
Queensland Mus., vol. 8, pt. 2, p. 137,
July 7, 1925 (on Sauvage).

Head nearly 7, longer than
dorsal. Snout long, pointed.
Interorbital much longer than
postocular.

Rings 18 + 47.

D. 28, on 1 trunk and 5 caudal
rings; A. 5; caudal 6, short,
little longer than eye; pectoral
rays 15.

Uniform brown. Length 100 mm.
(Sauvage.)

Queensland.

12801, 12942, 21547. Tidore Island,
south of Ternate. November 25, 1909.
Length 131 to 169 mm.

9955. Doc Can, Sulu Sea. January 7,
1910. Length 104 mm.

1956. Tokyo, market, Japan. 1916. Length 210 mm.

12885 to 12887. Apra Bay, Guam.

~~1905-1906 Tokyo, market~~
November 19-21, 1907. Length 172 to 176
mm.

The following represent the variety
stellans.

18415 to 18417. Limbones Cove, Luzon.
January 17, 1908. Length 176 to 182 mm.

47 examples. Tomahu Island, vicinity
Bouro Island, Dutch East Indies.
Length 40 to 87 mm.

16 examples. Tomahu Island. December
12, 1909. Length 41 to 63 mm.

Corythoichthys
~~Syngnathus~~ vercoi (White and Hale)¹²⁸³

Syngnathus vercoi White and Hale,
Rec. South Austral. Mus., vol. 1,
no. 4, p. 298, fig. 41, January 29,
1921 (type locality, Spencer Gulf).
Corythoichthys vercoi McCulloch, Mem.
Austral. Mus., no. 5, pt. 1, p. 87, June 29,
1929 (reference).

Ichthyocampus filum (not Günther)
Zietz, Trans. Roy. Soc. South
Australia, p. 298, 1908.

Head $10 \frac{1}{3}$ in total, $3 \frac{1}{2}$ to vent.
Snout $2 \frac{1}{2}$ in head, with median
upper beel from tip to interorbital,
thence as occipital and nuchal beel
on first trunk ring; another beel
on each side of snout above to
first nostril; eye 5 in head, 2 in
snout; supraorbital ridges

Four smaller quite dark or swarthy.
Also each caudal lobe with broad
pale band longitudinally.

20028. Malapascua Island, between
Leyte and Cebu. March 16, 1909.
Length 78 mm.

1 example. Mantapao Island, west
coast Bohol. April 8, 1908. Length 64 mm.

2 examples Maribojoc Bay, Maribojoc,
Bohol Island. March 26, 1909. Length
58 to 65 mm.

12284 [593]. Masbate reef, Masbate.
April 20, 1908. Length 79 mm.

14 examples. North west Verde Island.
July 22, 1908. Length 58 to 73 mm.

22801 and 22802. Opol, Mindanao.
August 4, 1909. Length 74 to 81 mm.

22193 to 22195. Pangasinan Island.
February 13, 1908. Length 68 to 75 mm.

1284

prominent and subcontinuous with upper trunk keel; opercle with strong keel.

Rings $16_{\text{tr}} + 43_{\text{ca}}$; trunk rings $1\frac{1}{2}$ times deeper than wide; keels well defined. Upper trunk keel ends on fourth caudal ring; median trunk keel extends on first caudal ring below origin of upper caudal keel; lower trunk and caudal keels continuous; ventral surface of trunk V-shaped and ridged. Brood pouch on caudal rings, eggs arranged in 2 rows.

D. $18_{\text{tr}} + 20_{\text{ca}}$, on $5_{\text{tr}} + 4_{\text{ca}}$ caudal rings; A. rays 2, fin minute; caudal 10; pectoral 10.

Head brown, with dark mark across occiput and another on nape. Snout and opercles with small white spots. Under side of snout pale. Chin dark brown, with white markings. Body brown,

(1285 to 1287)

with 4 narrow whitish bars across back, continued on sides, which crossed by dark bars, one on each body scute. Ventral surface lighter. Tail with 10 whitish bars above and on sides, but no dark bars. Back and sides of body and lower surface of tail with numerous small white dots.

Brood pouch brown, largely streaked with white and large irregular white blotch below each scute. Length 103 mm.

(Waite and Hale.)

South Australia.

1288

Corythoichthys margaritifer (Peters)

Syngnathus margaritifer Peters,
Monatssb. Akad. Wiss. Berlin, p. 457,
¹⁸⁶⁸ (1869) (type locality, ^{Sydney,} New South Wales).
— Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 171, 1870 (Port Jackson).
— Duméril, Hist. Nat. Poiss., vol. 2,
p. 566, 1870 (compiled). — Castelnau,
Victorian Offic. Rec. Philadelphia
Exhib. (Res. Fish. Australia), p. —,
1875 (Victoria); Proc. Linn.
Soc. New South Wales, vol. 3, p. 356,
1878 (Port Jackson). — Macleay, Proc.
Linn. Soc. New South Wales, vol. 6, pt. 2,
p. 285⁸⁹, 1881 (Port Jackson). — Ogilby,
Cat. Fish. New South Wales, p. 60, 1886
(compiled). — Duncker, Fauna Südew.
Austral. Michaelson and Hartmeyer,
vol. 2^{pt. 1}, p. 245, 1909 (^{Port Jackson; Sydney;} Bowen); Mitteil.
Boston Island

7155. Teomabal Island. September
18, 1909. Length 190 mm.

18771 to 18774. Tictuan Island.
September 8, 1909. Length 125 to 199 mm.
18775 to 18778. Tictuan Island.

6649, 6650 and 7918. Tuta Bay, Jolo Island,
second anchorage. September 19, 1909.
Length 181 to 202 mm.

13423. Buka Buka Island, Gulf
of Tomini, Celebes. November 20, 1909.
Length 156 mm.

9704. Talisse Island, north of Celebes.
November 9, 1909. Length 170 mm.

13551 and 13552. Tanabeke Island,
Flores Sea. December 21, 1909. Length
185 to 209 mm.

21489 and 22682. Gane Road, Gillolo
Island. December 1, 1909. Length 86 to
118 mm.

13294. Gomomo Island. December 3, 1909.
Length 178 mm.

1289

Naturh. Mus. Hamburg, vol. 32, p. 83,
1914 (1915) (Boston Island?).

Corythoichthys margaritifer McCulloch
and Whitley, Mem. Queensland Mus.,
vol. 8, pt. 2, p. 137, July 7, 1925
(reference). — McCulloch, Mem.
Austral. Mus., vol. 5, pt. 1, p. 87, June
29, 1929 (reference).

6135. Puerta Princesa, Palawan Island. April 5, 1909. Length 166 mm.

10755. Ininalasag Island, Masamat Bay. June 12, 1909. Length 173 mm.

12599¹²⁶⁰⁰ and 13273. Rapu Rapu Island. June 22, 1909. Length 125 to 146 mm.

14095. Sabtan Island. November 8, 1908. Length 166 mm.

15705. Sanguisiapo Island, Sulu Archipelago, Tawi Tawi Group.

February 24, 1908. Length 172 mm. [287].

6617 to 6619, 22183 and 22184. Vimalue, Bisibisi Island. September 23, 1909. Length 72 to 158 mm.

4654 to 4657¹⁸⁶⁰³, 20706. Tambul Sigambul, Tonguil Island, south of Zamboanga. September 14, 1909. Length 111 to 219 mm.

21898 to 21900. Tapiantana Island. September 13, 1909. Length 140 to 227 mm.

1289a

Tail twice long as trunk. Snout somewhat over 2 in head; low ridge along median line of snout and of crown of head and neck; supraorbital edge continued into feeble ridge on side of crown; opercle crossed by straight ridge.

Rings 20 + 35 to 37, without spines.

D. 21 to 23, on 2 trunk rings and 4 or 5 caudal rings. Pouch extends to or beyond 16th tail ring.

Brown, with mother of-pearl colored dots. Length 127 mm.

(Günther.)

New South Wales, Queensland.

1290

Genus Bhanotia Hora

Bhanotia Hora, Rec. Indian Mus.,
vol. 27, pt. 6, p. 463, December
1925. (Type Corythoichthys
corrugatus Weber, orthotypic.)

Body rather short, stout. Snout
slender, equals postorbital, lower
profile almost forms straight line
with lower head profile. Dorsal
profile of head abruptly upward at
orbit, forms angle with dorsal
snout profile, eyes prominent.
Occipital and nuchal shields
with median ^{serrated} crests, serrated
supraorbital ridges continued on
occiput. Opercle with complete
serrated longitudinal beel.
Upper trunk and caudal beels
discontinuous; lower trunk and
caudal beels continuous; median

trunk keel and upper caudal keel subcontinuous; intermedial shields or scutella present or absent.

Tail more than twice long as trunk. Dorsal mostly on anterior caudal rings. Anal, caudal and pectoral present. Eggs large, in 2 rows, in isolated open cells in caudal region of male, laterally protected by ventrally converging folds of skin, which meet in midventral line, opening out lengthwise to free young fishes.

Differs from Corythoichthys in its brood pouch, size and number of eggs and all prominences on head and body serrated.

Analysis of Species

- a.¹ Head dark, paler snout with dark points. corrugata.
- a.² Head with dark and light transverse lines or bands above and below. sewelli.

Bhanotia corrugata (Weber)

Syngnathus corrugatus Weber,
Siboga Exped., vol. 57, Fische, p.
112, fig. 38, 1913 (type locality,
Beo, Karakelang Islands).

Corythoichthys corrugatus Weber
and Beaufort, Fishes Indo Austral.
Archip., vol. 4, p. 73, fig. 32, 1922
(Karakelang).

Bhanotia corrugatus Hora, Records
Indian Mus., vol. 27, pt. 6, p. 464,
fig. 6, December 1925 (north end of
Rutland Island, Andamans).

Head contrasted dull chocolate brown, little paler on under surface. Iris dull yellowish. Fins all pale like general body color. Pectoral base sometimes brownish.

Red Sea, Arabia, Mauritius, Rodrigues, Mauritius, Seychelles, Philippines, Micronesia, Polynesia. Known chiefly by its coloration. In preserved specimens the head is usually chocolate brown and well contrasted with the remaining general pale coloration. Further as shown in Günther's figure the hind preopercle edge and hind opercle edge are usually deep or dark brown. I find the eye very variable, often quite large in young examples. In many from Oceania the scales

1292a

Depth 16 to $23\frac{1}{3}$; head $8\frac{1}{5}$ to 10,
width $2\frac{4}{5}$ to $2\frac{7}{8}$. Snout $2\frac{3}{4}$ to $2\frac{4}{5}$
in head; eye $4\frac{3}{4}$ to $4\frac{4}{5}$, $1\frac{2}{5}$ to $1\frac{3}{5}$
in snout, greatly exceeds
interorbital; upper ridges of
snout with small denticles;
interorbital 2 in eye; opercle
with complete longitudinal keel
and very fine close set radiating
lines.

Rings 15 + 42 or 43; minutely
roughened on keels; with fine
transverse striae. Upper trunk
keel reaches end of dorsal, not
continuous with upper caudal keel,
which extends forward to last
trunk ring; median lateral trunk
keel extends to first or second
caudal ring, below front end
of upper caudal keel; lower trunk
and caudal keels continuous.

Brood pouch on 10 caudal rings.

D. 30 to 32, on 1 trunk and 7 caudal rings, fin base not elevated; A. minute; caudal $3\frac{3}{5}$ in head; pectoral 6 to $5\frac{1}{4}$, rays 15.

More or less uniform brownish snout with small rather close set dark brown dots or minute spots. Dark brown band obliquely back from below orbit, another broader from each postocular united medially and third still posterior across isthmus. In some examples these bands limited by gray white lines or are largely gray white and several gray white lines cross lower surface of snout. Each trunk ring with very small gray or white spot medially below lateral trunk and lower trunk keels, and another

at middle of each segment, also ^{129c}
same may occur on median ventral
trunk keel. Fins brownish.

East Indies, Philippines.

Some of my material shows the
alternating dark and light
transverse bands mentioned by
Weber and Beaufort. These
white bands are very variable,
hardly alike in any two
individuals.

Three examples. Maetan Island
tide pools. August 31, 1909.
Length 63 to 73 mm.

One example. Mahinog,
Camiguin Island. August 3, 1909.
Length 58 mm.

Three examples. Kasipit,
Mindanao, tide pools. August 1,
1909. Length 35 to 58 mm.

One example. Reef opposite
Cebu. April 7, 1908. Length 51
mm.

Three examples. Makassar Island,
Celebes, Dutch East Indies, December
16, 1909. In tidepool, Length 74 to 84
mm.

Bhanotia sewelli Hora

Bhanotia sewelli Hora, Records
Indian Mus., vol. 27, pt. 6, p. 465,
pl. 11, fig. 5, text fig. 7 (heads),
December 1925 (type locality,
South Point of Outram Island,
Andamans).

Trunk $2\frac{1}{3}$ in tail. Depth $20\frac{1}{3}$;
head $5\frac{1}{2}$ in trunk. Snout short,
slender, shorter than postorbital,
 $1\frac{1}{4}$ times eye, turned upward
anteriorly; orbits very prominent;
spines along mid-dorsal line of
snout, as low crest in interorbital
short space; well marked interrupted
crest on nape; on front and along
inner border of each nostril. 7
prominence with 3 spines; similar
prominences bearing 4 spines oblique
and slightly behind snout tip, 1 on

1295

each side; orbital borders serrated, from middle curved ridges run far back as end of occiput; low ridges on under surface of snout; opercle with longitudinal keel and low radiating ridges.

Rings 15 + 43. Upper trunk keels reach origin of 28th dorsal ray, not continuous with upper caudal keels; upper caudal keels extend almost to front border of first caudal shield; median trunk keels end below upper keels of tail, almost subcontinuous; lower trunk ^{and caudal} keels continuous.

D. 31; A. 3; caudal 10; pectoral 16.

Uniformly gray with light, white streaks on back, one corresponding to each shield. In hind region of tail white streaks continued on sides. Series of

7 small, rounded spots on front trunk shields between inferior and median keels. Faint indications of 1 or 2 other rows of spots. White V-shaped band on head from eye to eye, pointed backwards in middle. Mid-dorsal surface of snout and front half of interorbital white. On head below broad V-shaped band between hind eye edges and sharply directed back in middle. Behind 3 narrower bands and in front broad transverse band. Snout tip white and 1 or 2 broken white lines behind. Length 62.9 mm. (Hora.)
Andaman Islands.

1297

Genus Micrognathus Duncker

Micrognathus Duncker, Mitteil.

Naturh. Mus. Hamburg, vol. 29, p.
235, 1911 (1912). (Type Syngnathus
brevirostris Rüppell, orthotypic.)

Body elongate, more or less stout,
anteriorly heptagonal, posteriorly
tetragonal. Snout stout, more or
less curved upward, very short,
equals postorbital, rising more or
less gently to orbital region. Keel
on opercle only visible anteriorly,
extends medially. Rings transversely
striated, keels moderately prominent,
smooth or only posteriorly finely
dentated or somewhat spinous.
Ridges on head generally feeble.
Cutaneous appendages on head
and body generally present. Upper
keels of trunk and tail discontinuous,

1298

also inferior keels of trunk and tail. Median keels of trunk and lower keels of tail continuous. Intermedial shields (scutella) large. Premuchal and muchal shield present. Dorsal short, rays 17 to 23, base not elevated, on 1 or 2 last body rings or on none and on 3 to 5 caudal rings.

Pectorals, anal and caudal present. Eggs rather large, isolated in cutaneous cells on anterior 14 or 15 caudal rings; laterally protected by thin cutaneous folds which begin behind anal and converge posteriorly; coalesce temporarily in median line; skin pads may contain feebly developed bony plates.

Marine fishes on coral reefs or shore waters of the Indo Pacific and Caribbean Sea.

Analysis of Species

a.¹ Snout without median crest,
equals or somewhat less than
postorbital. brevirostris.

a.² Snout with median crest above
bearing 4 to 6 strong points, much
shorter than postorbital. matafae.

Micrognathus brevirostris (Rüppell)

Syngnathus brevirostris Rüppell,
~~Atlas Ichth. Méditerran. Fishes~~
~~Fishes~~. Neue Wirbelth., Fische,
 p. 147, 1835 (type locality, Massana,
 Red Sea). — Günther, Cat. Fish.
 Brit. Mus., vol. 8, p. 167, 1870 (type;
 Massana). — Dumeril, Hist. Nat.
 Poiss., vol. 2, p. 565, 1870 (compiled).
 — Klunzinger, Verh. Zool. Bot. Ges.
 Wien, vol. 21, p. 652, 1871 (Red Sea).
 — Weber, Siboga Exped., vol. 57,
 Fische, p. 106, 1913 (Gesser; Sula
 Besi). — Beaufort, Bijdr. Dierk.
 Amsterdam, vol. 19, p. 102, 1913
 (Saonek, Waigiu).

Archiv Naturges., 1853, pt. 1, p. 231 (reference);

Corythoichthys brevirostris Kaup,
 Cat. Lophobr. Fish Brit. Mus., p. 28,
 1856 (Red Sea).

Serranus undulosus (Quoy and Gaimard).

Bodianus undulosus Quoy and Gaimard, Voy. Uranie, Zool., 1824, p. 310. Waigiu and Rawak.

Epinephelus undulosus Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1873-76, p. 46, pl. (10) 288, fig. 3 (Celebes, Amboina, Waigiu). — Koulenger, Cat. Fishes Brit. Mus., vol. 1, 1875, p. 199 (Ceylon, Madras, China, Mycol). — Regan, Journ. Bombay Nat. Hist. Soc., vol. 16, no. 2, 1905, p. 329 (Sea of Oman, 107 to 170 fathoms). — Seale and Bean, Proc. U. S. Nat. Mus., vol. 33, 1907, p. 242 (Zamboanga). — Weber, Siboga Exped., vol. ^{57, Fische,} 65, 1913, p. 201 (Saleyer).

Serranus undulosus Day, Fishes of India, pt. 1, 1875, p. 15, pl. 2, fig. 1 (Madras); Fauna Brit. India, vol. 1, 1889, p. 446. — Pearson, Rep. Gov. Marine

Micrognathus brevirostris Duncker,
 Mitteil. Naturh. Mus. Hamburg,
 vol. 32, p. 75, 1914 (1915) (Timor). —
Weber and Beaufort, Fishes Indo-
 Austral. Archip., vol. 4, p. 75, 1922
 (Singapore; Vula Besi; Gisser; Waigiu;
 New Guinea; Thursday Island).
 — McCulloch and Whitley, Mem.
 Queensland Mus., vol. 8, pt. 2, p. 137,
 July 7, 1925 (reference). — Whitley,
 Austral. Zoologist, vol. 4, pt. 4, p.
 229, April 1926 (North West Islet,
 Capricorn Group; Port Denison).
 — Fowler, Mem. Bishop Mus., vol.
 10, p. 114, 1928 (compiled). —
McCulloch, Mem. Austral. Mus., vol.
 5, pt. 1, p. 88, June 29, 1929 (reference).

increase in number with age; old
examples dark brown, closely dotted
black.

Curvina

r.² Head, body and fins with large,
obscure or poorly defined darker
brown spots or blotches, though not
on chest or belly; dark saddles or
~~cross~~ bands indistinct with age.

malabaricus

1302

Syngnathus sundaicus Bleeker,
Verh. Batavia. Genoot. (Trosk.),
vol. 25, p. 21, 1853 (type locality,
Anjer). — Günther, Cat. Fish. Brit.
Mus., vol. 8, p. 155, 1870 (copied). —
Duméril, Hist. nat. Poiss., vol. 2,
p. 556, 1870 (compiled).

Syngnathus andersonii Bleeker,
Nat. Tijds. Ned. Indië, vol. 15, p.
(458) 465, 1858 (type locality,
Cocos-Keeling Islands); vol. 16, p.
240, 1858 (Cocos-Keeling); Act.
Soc. Sci. Ind. Néerl. (Sumatra),
vol. 8, p. 72, 1859 (Cocos-Keeling).
— Duméril, Hist. nat. Poiss., vol.
2, p. 564, 1870 (East Indies?).

numerous small yellowish or gray white round spots; interspaces between may form reticulate or undulous oblique lines; large, pale round blotches may be present in addition to small spots; maxillary groove edged black; vertical fins covered with yellowish round spots and edged yellowish.

summana

g.⁴ Young gray or pale brown above, with large dark brown spots or irregular marblings, with or without numerous, small, round, dark brown or black spots; with age markings indistinct and speckled all over with black.

fuscoyuttatus

p.³ Brown, with 4 or 5 distinct dark transverse vertical bands.

r.² Frequently with well defined white and black dots, wide apart in young,

Syngnathus tetraphthalmus Bleeker,
Nat. Tijds. Ned. Indie", vol. 15, p.
(458) 467, 1858 (type locality,
Cocos-Keeling Islands); vol. 16,
p. 240, 1858 (Cocos-Keeling); Act.
Soc. Sci. Ind. Néerl. (Sumatra),
vol. 8, p. 72, 1859 (Cocos-Keeling);
Verslag. Akad. Wet. Amsterdam,
ser. 2, vol. 2, p. 302, 1868 (Sanger).
— Günther, Cat. Fish. Brit. Mus.,
vol. 8, p. 169, 1870 (type). — Weber,
Zool. Forsch. Austral. Semon,
vol. 5, p. (115) 275, 1895 (Thursday
Island; coast of New Guinea).
— Duméril, Hist. Nat. Poiss., vol. 2,
p. 563, 1870 (compiled).

o.¹ ~~Purplish~~ brown, with 5 dark transverse vertical bands which extend on dorsals, on body forming 2 pairs with single band on caudal peduncle. unooara

o.² Dark transverse bands, when present, not paired.

p.¹ Usually 2 to 5 dark blotches on back and often another on caudal peduncle above.

gf.¹ Pale brown, with round dark or black spots all over, smaller and more numerous with age; paired fins usually blackish; all fins with narrow yellowish white edge. corallicola

gf.² Dark purplish brown, with more or less distinct round whitish spots, large and form black edged ocellus in young; maxillary groove edged black; fins with or without light dots.

gf.³ Brown above, with more or less caeruleopunctatus

Corythoichthys tanakae Jordan
and Starks, Proc. U. S. Nat. Mus.,
vol. 30, p. 969, fig. 2, 1906 (type
locality, Tanegashima). —
Snyder, Proc. U. S. Nat. Mus., vol.
42, p. 407, 1912 (Okinawa). —
Jordan, Tanaka, Snyder, Journ.

1305

College Sci. Tokio, vol. 33, p. 97,
fig. 72, 1913 (reference).

Doryichthys tanakae Schmidt,
Trans. Pac. Comm. Acad. Sci.
U. S. S. R., vol. 2, p. 33, 1930
(Nagasaki).

Syngnathus spinicaudatus Ogilby,
Ann. Queensland Mus., No. 9, p. 16,
1908 (type locality, Cape York).

Amboina, Tonapé). — Snyder, Proc.
U. S. Nat. Mus., vol. 42, 1912, p. 414
(Manegashima), p. 498 (Okinawa). —
Weber, Siboga Exped., vol. ⁵² ~~65~~ ^{Fische}, 1913, p. 205
(Kirung, Saleyer, Nusa Laut). —
Pellegrin, Bull. Soc. Zool. France, vol.
39, 1914, p. 224 (Diego Suarez, Madagascar).
— Regan, Ann. Durban Mus., vol. 2, 1917-
20, p. 197 (Durban, Natal). — McCulloch,
Proc. Linn. Soc. New South Wales, vol. 46,
pt. 4, 1921, p. 468 (Two Islands and
Palm Islands, Queensland; New Hebrides;
New Caledonia; Bougainville Island;
Batavia). — Fowler, Proc. Acad. Nat. Sci.
Phila., 1923, p. 39 (Madagascar). — Barnard,
Ann. South Afr. Mus., vol. 21, 1927, p.
485 (Natal coast).
Serranus (Epinephelus) caeruleopunctatus Zugmayer,
Abhandl. Bayer. Akad. Wiss., vol. 26, pt. 6, 1913,
p. 10 (Orman).

Tail more than $1\frac{3}{5}$ times to twice long as trunk. Body somewhat compressed, ridges prominent, sometimes slightly dentated. Snout very short, stout, somewhat curved upward, equals or somewhat less than postorbital, long as eye or half its length longer and $2\frac{1}{2}$ to 3 times head, without median crest or spines or with feeble crest only; opercle with short feeble basal keel which may reach middle its length, with radiating lines.

Rings 15 to 17 + 28 to 32, rings transversely striated. Cutaneous appendages more or less developed on head, nape and body edges.

D. 17 to 22, on 0 to 20 trunk rings and 3 to 5 caudal rings; A. 2 to 4; caudal rays 10; pectoral 9 to 14.

Color variable, usually dark brown with light cross bars on back on each ring or appear at certain distance on about 10 rings only. Females generally lighter. Opercle may have brown ocellus with pearl colored and brown peripheral ring. Length 75 mm.

(Weber and Beaufort.)

Red Sea, Zanzibar, Mozambique,
East Indies, Queensland, New
South Wales, Japan.

apu, Stalax 241

cheliidae 40

cheneidae 419

cheneis 420, 421

albescens 419

brachyptera 421

clypeata 419

lineatus 421

naucrates 420

naucrates 420

ostechir 421

remora 9, 419

squalipeta 421

vittatus 420

hidra amblyodon 5.0

delicatula 50

leihala 49

nebulosa 6, 49, 50

obscura 49

polizona 6, 48

psalion 49

sauvagei 49

tritor 49

trossula 50

uniformis 40

vincta 49

B

Micrognathus mataafae (Jordan and Seale)

Corythoichthys mataafae Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 213, fig. 19, 1905 (1906) (type locality, Off Mulino'u, Samoa).

Corythoichthys mataafae Fowler, Bull. Bishop Mus., no. 22, p. 7, 1925 (Guam).

Syngnathus mataafae Günther, Journ. Mus. Godeffroy, vol. 9, pt. 17, p. 438, 1910 (compiled).

Micrognathus mataafae Duncker, Mitteil. Naturh. Mus. Hamburg, vol. 32, p. 76, 1914 (1915) (Samoa). — Fowler, Mem. Bishop Mus., vol. 10, p. 114, 1928 (compiled).

narrow white edge. chlorostigma
i.² Head and body covered all over with
 unequal spots, some black, some brown,
 separated by pale or whitish polygonal
 network; vertical fins with large, round,
 dark brown or black spots; caudal with
 narrow white edge; pectoral dark
 terminally, edge narrowly white gilberti
h.² Pectoral nearly or quite long as head;
 brown, with large, darker, unequal spots,
 separated by pale polygonal network;
 vertical fins with large, round, dark
 brown spots; pectoral brown or blackish,
 uniform or spotted. megachir

c.² Body with dark transverse bands.

f.¹ Spinous dorsal membranes
 not black or darker marginally
 than rest of fin.

h.¹ Brown, with 5 or 6 inclined
 transverse bands, sometimes

Depth $23\frac{2}{5}$; head $11\frac{3}{4}$, width $2\frac{1}{8}$.
 Snout 3 in head from snout tip;
 eye $4\frac{3}{4}$, $1\frac{1}{2}$ in snout, greater than
 interorbital; median crest of
 snout above high, with elevated
 points; interorbital $1\frac{1}{2}$ in eye;
 opercle with short-anterior or
 basal keel, radiating striae very
 fine or rugose.

Rings $15 + 34$; with fine
 transverse striae. Keels smooth,
 rather low; upper trunk keel
 nearly to hind basal end,
 discontinuous with upper caudal
 keel; median lateral trunk
 keel continuous with lower caudal
 keel; lower trunk keel and
 median ventral trunk keel to
 tail. Brood pouch on 13 caudal
 rings, ova in 4 longitudinal
 rows.

D. 21, on 1 trunk and 4
 caudal keels, base not elevated;

13076

caudal minute; pectoral $3\frac{1}{4}$ in head, rays 12.

Brown, scarcely paler below. Iris gray. Two broken brown lines transversely across snout, another little broader down from lower eye edge, one from hind eye edge and finally one over isthmus. On body each intermedial scute with brown bordering line, all as connected rings, 6 on each trunk ring and 4 on each caudal ring.

^{East Indies.}
Philippines, Micronesia, Polynesia. A single small example from the Philippines, listed below, which shows the median rostral crest. It has rings 17+39.

One example. Van Miguel Harbor,
Ticao Island. April 21, 1908. Length
33 mm.

U. S. N. M., No. 51724. Samoa.
Bureau of Fisheries. Length 110 mm.
Type of Corythoichthys matiafae.

1309

Genus Trachyrhamphus Kaup

Trachyrhamphus Kaup, Cat. Lophobr.
Fish Brit. Mus., p. 23, 1856. (Type
Syngnathus serratus Schlegel,
designated by Jordan, Genera of
Fishes, pt. 2, p. 253, 1919.) Duncker,
Mitteil. Naturh. Mus. Hamburg,
vol. 29, p. 233, 1912.)

Trachyrhamphus Duncker,
Mitteil. Naturh. Mus. Hamburg,
vol. 29, p. 233, 1919. (Type
Syngnathus serratus Dun.
Schlegel.)

Body much elongated, trunk heptagonal. Tail tetragonal and much longer than trunk. Head with eyes and front prominent, forming angle with snout, which with serrated keel. Opercle with basal convex keel, directed upward and with fine radiating lines. Shields transversely rugose, edges smooth, not prominent. Intermedial shields oval, 1 prenuchal and 2 nuchals. Upper and lower keels of trunk and tail discontinuous; median keel of trunk and lower keel of tail continuous. Eggs very small and numerous, isolated in cutaneous cells on tail, protected by lateral cutaneous folds which begin behind anus, diverge hindwards and form brood-pouch

1254

Serranus diacanthus Valenciennes.

Serranus diacanthus Valenciennes, Hist. nat. Poiss., vol. 2, 1828, p. 319. Malabar. —
Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 110 (Bengal, China, Hong Kong, ~~Louisiades~~, India). — Kner, Reise Novara, Zool., vol. 1, pt. 5, 1865, p. 20 (Hong Kong). — Day, Fishes of India, pt. 1, 1875, p. 17, pl. 3, fig. 4 (Kurrachee). — Martens, Preuss. Exped. Ost-Asien, vol. 1, 1876, p. 385 (Formosa Strait; Nagasaki Bay). —
Günther, Rep. Voy. Challenger, vol. 1, 1880, p. 55 (Hong Kong). — Károli, Termesz. Füzetek, Budapest, vol. 5, 1882, p. 149 (Yokohama). — Day, Fauna Brit. India, vol. 1, 1889, p. 449. — Boulenger, Proc. Zool. Soc. London, 1889, p. 237 (Muscat, Arabia). — Thurston, Notes Pearl Fisher. Manaar, 1890, p. 91 (Pamban). — Elera, Cat. Fauna

mesially not closed. All fins developed. Dorsal on elevated base, inserted on 6 rings, middle nearly above anus. Caudal small.

Analysis of Species

a¹ Rings 21 to 23 + 44 to 50; D. 25 to 29. gooraphoo.

a² Rings 15 + 34; D. 18. carinirostris.

20243. San Roque market,
Cavite. June 13, 1908. Length 100 mm.

9967. Kowloon market, China.
September 18, 1908. Length 153 mm.

Trachyrhamphus gooraphoo (Cantor)

Syngnathus gooraphoo Cantor,
 Journ. Asiatic Soc. Bengal, vol.
 18, pt. 2, p. 1369, 1849 (1850)
 Can Gooraphoo subboothoo Russell,
 Fishes of Coromandel, vol. 1, p. 21,
 pt. 30, no. 2, 1803, type locality.
 Vizagapatam).

encl²⁹

669

Sparus laticeps (Cuvier)

Chrysophrys laticeps Cuvier, Hist. nat. Poiss.,
vol. 6, 1830, p. 122. Cape of Good Hope. $\frac{1}{m}$

Valenciennes, Règne animal, Cuvier ill.

Poiss., 1839, pl. 34, fig. 2. $\frac{1}{m}$ Tappe,

Synopsis Edible Fishes Cape, 1853, p. 18

(Table and False Bay). $\frac{1}{m}$ Günther, Cat.

Fishes Brit. Mus., vol. 1, 1859, p. 485 (Cape;
False Bay).

Pagrus (Chrysophrys laticeps Steindachner,
Sitzb. Ber. Akad. Wiss. Wien, Math.-naturw.
Klasse, vol. 57, pt. 1, 1868, p. 972 (Cape of Good
Hope; Mauritius).

Pagrus (Pagrus) laticeps Steindachner, op. cit.,
vol. 83, pt. 1, 1881, p. 205 (Cape of Good Hope,
Zanzibar, Mauritius).

Pagrus laticeps Barnard, Ann. South
African Mus., vol. 21, pt. 2, 1927, p. 701 (False
Bay, Ilgou Bay, East London, Natal, in 36
fathoms).

Syngnathus serratus Schlegel,
Fauna Japonica, Poiss., pt. 15, p. 272,
pl. 120, fig. 4, 1850 (type locality,
Japan). — Bleeker, Verh. Batavia.
Genoot. (Japan), vol. 25, p. (21) 55,
1853 (Nagasaki); Act. Soc. Sci.
Ind. Néerl., vol. 3, no. 3, p. 7,
1857-58 (Japan). — Günther, Cat.
Fish. Brit. Mus., vol. 8, p. 167, 1870
(North China; China; Siam). —
Bleeker, Nederl. Tijds. Dierk., vol.
4, p. 126, 1873 (1874) (reference). —
Martens, Preuss. Exped. Ost Asien,
vol. 1, p. , 1875 (Hong Kong). —
Day, Fishes of India, pt. 4, p. 677,
pl. 173, fig. 4, 1878 (Madras). —
Nyström, Bihang Svensk. Vet. Akad.
Handl., vol. 13, no. 4, p. 47, 1887

spines at the preopercle angle.
In some examples of the present
species the spines at the preopercle
angle are enlarged, 3 or more,
but not 2. We have no examples
of V. diacanthus from the Philippines
though both species were secured
in the Hong Kong market.

1314

(Nagasaki). — Day, Fauna British India, Fishes, vol. 2, p. 461, fig. 164, 1889.

Trachyrhamphus serratus Kaup, Cat. Lophobr. Fish Brit. Mus., p. 23, 1854 (China; ^{Japan;} Macao). — Duméril, Hist. Nat. Poiss., vol. 2, p. 538, 1870 (Macao; China). — Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 58, 1901 (reference); Proc. U. S. Nat. Mus., vol. 24, p. 9, 1901 (1902) (Yokohama; Wakanoura; Nagasaki). — Franz, Abhand. Kon. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 22, 1910 (Misaki; Aburatsubo). — Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 408, 1912 (Misaki). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 96, 1913 (reference).

on back nearly always more numerous. Belly, breast and lower surface of head pale to whitish and immaculate. Iris olive. Vertical fins brownish, colored with dark brown, gray and dull olive, often producing mottled appearance. Paired fins brownish. Ventral darker terminally.

We differ from Boulenger in separating this species from Verranus diacanthus Valenciennes. It appears to differ in the arrangement of the dark transverse bands, which are inclined instead of vertical, the body is mottled and spotted as well as banded and the pectorals are light, instead of black or blackish. V. diacanthus, as figured by Day, has 2 strong

↑ - Weber and Beaufort, Fish. Indo Austral. Archip., vol. 4, p. 99, fig. 41, 1922 (Japan).

St. John & Univ., No. 1, p. 98, January 1931 (reference).

Trachyrhamphus serratus Bleeker, Act. Soc. Sci. Ind. Neerl. (Sumatra), vol. 8, p. 71, 1859 (Japan). — Chevey, Inst. Océan. Indo Chine, 19^e note, p. 18, August 25, 1932 (Cochin China).

Trachyrhamphus serratus Duncker, Spolia Zeylonica, vol. 7, p. 30, 1910; Mitteil. Naturh. Mus. Hamburg, vol. 32, p. 105, 1914 (1915) (Siam; China; Hong Kong; Formosa; Japan; Tokyo).

↑ - Weber and Beaufort, Fish. Indo Austral. Archip., vol. 4, p. 99, fig. 41, 1922 (Japan).

St. John & Univ., No. 1, p. 98, January 1931 (reference).

Trachyramphus serratus Bleeker, Act. Soc. Sci. Ind. Neerl. (Sumatra), vol. 8, p. 71, 1859 (Japan). — Chevey, Inst. Océan. Indo Chine, 19^e note, p. 18, August 25, 1932 (Cochin China).

Aug 28
no. 28
4926
Aug 20
no. 20
4917
Aug 17
no. 17
4911

length 282 mm.

4926. Japan, Iriomote Island, Iriomote

Island Group. February 20, 1908. Length 253 mm.

2917. Iriomote Island, Iriomote Is., 1909.

length 215 mm.

D. XI, 16, I or 17, I, third spine $2\frac{2}{5}$ to $2\frac{3}{4}$ in total head length, third ray 2 to $2\frac{1}{4}$; A. III, 8, I, second spine $2\frac{3}{4}$ to 3, third ray $1\frac{7}{8}$ to $2\frac{1}{4}$; caudal $1\frac{1}{2}$ to $1\frac{2}{3}$, convex behind; least depth of caudal peduncle $3\frac{4}{5}$ to $3\frac{7}{8}$; pectoral $1\frac{2}{5}$ to $1\frac{2}{3}$; ventral $1\frac{7}{8}$ to $2\frac{1}{5}$.

Brown, usually with 5 or 6 vertical darker cross bands wide as interspaces, often more or less inclined and sometimes paired or just 2 or 3 often dividing below and may form 6 inferior narrow bands, some of which may extend on base of anal fin. Dark bands also reflected on dorsal fins. Body often covered with dark spots, often forming waved streaks on tail below which may be more or less broken; spots

Syngnathus subbooko Bleeker,
Verh. Batavia. Genoots. (Bengal),
vol. 25, p. 80, 1853 (type locality,
Visagapatam; on Russell).

Typhlus rostro cristato-serrato
Kaup, Cat. Lophobr. Fish Brit. Mus.,
p. 23, 1856 (name in synonymy).

Syngnathus trachyrhynchus Günther,
Cat. Fish. Brit. Mus., vol. 8, p. 167,
1870 (type locality, China) (name
in text).

Syngnathus chinensis Günther, Cat.
Fish. Brit. Mus., vol. 8, p. 167, 1870
(type locality, China) (name in text).

Trachyrhamphus cultrirostris Peters,
Monatshb. Akad. Wiss. Berlin, p. 710,
1870 (type locality, Siam?). — Duméril,
Hist. Nat. Poiss., vol. 2, p. 539, 1870
(copied).

interorbital $7\frac{1}{4}$ to $8\frac{1}{5}$, nearly level; hind preopercle edge denticulate, with enlarged serrae little above angle; opercular spines 3, equidistant, upper little advanced. Gill rakers $8 + 14$, lanceolate, $1\frac{1}{2}$ in gill filaments, which $\frac{1}{2}$ of eye; 5 above and 5 below rudimentary.

Scales 98 in lateral line to caudal base and 15 more on latter; tubes 47 in lateral line to caudal base and 10 more on latter; 18 scales above lateral line, 25 below, 52 predorsal, 24 rows across cheek to preopercle angle at edge; body scales without small, basal, auxiliary scales; maxillary scaleless. Scales with 4 to 7 basal radiating striae; 28 to 34 apical denticles, in 4 to 6 transverse rows; circuli moderate.

1317

Depth $3\frac{2}{5}$; head 14, $4\frac{7}{8}$ to vent. Snout $2\frac{7}{8}$ in head; eye 6, 2 in snout, project, with prominent edge; median spiny crest on snout above, more than twice eye, equals more or less postorbital; opercle with basal convex keel directed upwards.

Rings 21 to 23 + 44 to 50. Split cutaneous appendages mesially on back and on median keels of trunk. Upper trunk and caudal keels discontinuous, latter begins on last trunk ring; median lateral trunk keel and lower caudal keel continuous.

D. 25 to 29, on 2 to 4 trunk and 2 or 3 caudal keels; A. 3 or 4; caudal 8 to 10, fin very small, $3\frac{1}{3}$ in head; pectoral $5\frac{1}{5}$, rays 14 to 19.

Brown, with 9 to 12 broad, dark, diffuse cross bands and

light spots along side or
variegated with dark brown.

Below opercle dark bands.

Length 303 mm. (Weber and Beaufort.)

India, Ceylon, Singapore,
Siam, China, Formosa, Japan.

Trachyrhamphus carinirostris 1317 b
new species

1317 c

Depth 27; head $10\frac{2}{3}$, width $2\frac{3}{5}$.
Snout $3\frac{2}{5}$ in head from snout tip,
with high keel longitudinally above;
eye 4, $1\frac{1}{8}$ in snout, greater than
interorbital; mouth very small;
interorbital concave, with high
filament above each eye equal to
eye diameter; interorbital width
 $\frac{1}{2}$ of eye diameter; opercle without
keel but very fine numerous
radiating striae present.

Rings 15 + 34; with very fine
vertical transverse striae; keels
distinct, smooth. Upper trunk
keel continuous nearly to hind
end of dorsal base, discontinuous
with upper caudal keel, which
begins on last trunk ring;
median lateral keel continuous
with lower caudal keel; median
trunk ventral keel rather low,
to vent.

D. 18, on 1 trunk and 4 caudal

1317a

rings, fin height equals eye;
A. minute; caudal 3 in head;
pectoral $3 \frac{1}{2}$, rays very fine.

Brown, paler below. Iris
dark gray. Fins brown.

Apparently differs from
Trachyrhamphus gooraphoo in
fewer rings, fin rays and the
presence of the supraorbital
flap. The snout is with an
entire elevated bony keel and
the occipital-muchal keel is
also elevated.

D. 5596. Zamboanga Light N.
31° W., 0.1 mile (lat. 6° 54' 00" N.,
long. 122° 04' 30" E.), off Zamboanga
Mindanao. October 10, 1907. Length
69 mm. Type

1318

Genus Gozia Jordan and Snyder

Gozia Jordan and Snyder, Proc. U.
S. Nat. Mus., vol. 24, p. 8, 1901 (1902).
(Type Gozia wakanourae Jordan
and Snyder, monotypic.)

Body slender, elongate. Trunk short, more or less swollen medially. Head not elevated, median keel absent or present, low, smooth or with slight serrations, never spinous. Front and orbits not prominent. Snout elongate. Cutaneous appendages sometimes present. Opercle with ridge curving upwards towards gill opening, but distinct only at base. Rings transverse, striated. Upper and lower keels of trunk and tail discontinuous. Lateral line present. Median keel of trunk continuous with lower caudal keel. Premuchal plate single, 2 muchals. Eggs small, numerous, isolated in cutaneous cells on tail, entirely enclosed by subcaudal brood-pouch.

on latter; tubes 44 to 46 in lateral line and 4 more on latter; 18 to 22 scales above lateral line, 25 to 27 below, 44 to 56 predorsal, 30 rows across cheek; body scales without small basal auxiliary scales; fin bases all finely scaled; scales mostly smooth on head, very small on cheek and crown; maxillary naked. Scales with 7 basal radiating striae, 36 to 48 apical denticles, in 3 or 4 transverse series; circuli fine.

D. IX, 16, I, third spine $2\frac{7}{8}$ to $3\frac{2}{5}$ in total head length, twelfth ray $2\frac{1}{5}$ to $2\frac{3}{5}$; A. III, 8, I (once III, 6, I), second spine $2\frac{1}{3}$ to $3\frac{1}{3}$, fourth ray 2 to $2\frac{4}{5}$; caudal $1\frac{1}{2}$ to $1\frac{2}{3}$, rounded; least depth of caudal peduncle $2\frac{4}{5}$ to $2\frac{5}{6}$; pectoral $1\frac{1}{2}$

formed by lateral cutaneous folds beginning behind anus. Tail not prehensile. Dorsal about equally on trunk and on tail, base scarcely or only very slightly elevated, middle above anus. Caudal small.

Marine fishes of the Indo-Pacific.

Depth $2\frac{3}{4}$ to $2\frac{7}{8}$; head $2\frac{1}{2}$ to $2\frac{3}{5}$, width $2\frac{1}{3}$ to $2\frac{7}{8}$. Snout $4\frac{1}{5}$ to $4\frac{3}{4}$ in head from snout tip; eye $4\frac{2}{5}$ to $5\frac{1}{3}$, 1 to $1\frac{2}{5}$ in snout, greater than interorbital; maxillary extends slightly beyond eye, expansion $\frac{4}{5}$ to 1 in eye, length $1\frac{7}{8}$ to $2\frac{1}{8}$ in head from snout tip; teeth fine, in bands in jaws; pair of front canines in each jaw; minute teeth on vomer and palatines; interorbital 8 to $8\frac{1}{4}$, slightly convex; preopercle edge with inconspicuous minute serrae; opercular spines 3, upper slightly inclined upward and most advanced, median closer to lower. Gill rakers 8 + 16, lanceolate, equal gill filaments or $\frac{1}{2}$ of eye.

Scales 82 to 90 in lateral line to caudal base and 16 to 18 more

Analysis of Species

1321

- a.¹ D. 23 to 28.
- b.¹ No supraorbital tentacle.
- c.¹ D. 23; rings 15 + 33. investigatoris.
- c.² D. 24 or 25.
- d.¹ Caudal rings 28. brevicaudis.
- d.² Caudal rings 36. tigris.
- d.³ Caudal rings 57. maculata.
- e.³ D. 26; rings 24 + 46. intermedia.
- c.⁴ D. 27; rings 24 + 56. longirostris.
- c.⁵ D. 28; rings 24 + 63. bicoarctata.
- b.² Supraorbital tentacle present;
- D. 23; rings 20 + 38. supraciliaris.
- a.² D. 14; rings 16 + 29. annulata.

~~Gozia~~
~~Syngnathus~~ investigatoris (Hora) ¹³²²

Syngnathus investigatoris Hora,
Rec. Indian Mus., vol. 27, pt. 6, p.
461, pl. 11, fig. 4, December 1925
type locality, Mergui Harbor.

Head $7\frac{1}{2}$, little over 2 in trunk.
Snout less than postorbital,
cylindrical, with prominent,
smooth, median-dorsal keel
far back as narrow interorbital;
eye 2 in snout, low ridges
begin from middle and extend
back eye diameter; opercle with
low, curved keel, bent upward;
low median keel on head,
more pronounced one on nape
and nuchal shield.

Rings $15 + 33$; indistinctly
striated transversely, smooth edges

A single dorsal with 11 or 12 spines and 6 or 7 rays, the membrane deeply notched between spines and spinous portion thrice as long as soft. Anal short, with 3 spines and 8 or 9 rays. Caudal rounded. Pectoral short, rounded, upper rays longest; rays 20 or 21. Ventrals below pectorals, close together, with spine and 4 soft rays, first of which much thickened and bifid.

Indian and Western North Pacific Oceans.

prominent; intermedial shields oval, well developed. Upper trunk keel ends near hind edge of third caudal shield, not continuous with upper caudal keel, which deflected anteriorly and ends near front edge of first caudal ring close to end of median trunk keel; lower caudal and trunk keels continuous.

D. 23, on 1 trunk and 4 caudal rings, base slightly elevated; caudal rays 12; Pectoral 15.

Yellowish brown, with 10 annular bands of deeper color, almost equidistant, to every fifth ring. Lighter bands at junctures of shields, broader and more marked near lower keels and along ridge each encloses white spot in middle. Mid portion of each shield along lower keel conspicuously white.

and thus forms longitudinal series
of white spots. Sides of snout
and cheeks deep brown. Whitish
longitudinal streak on side of
snout just before eye. Length
not given. (Hora.)
India.

1325

Yozia brevicauda (Castelnau)

Syngnathus brevicaudus Castelnau,
Offic. Rep. Philadelphia Exped.
(Res. Fish. Australia), p. 48, 1875
(type locality, Swan River, South
West Australia). — Macleay, Proc.

Linn. Soc. New South Wales, vol. 6, pt. 2,
p. 291, 1882 (copied).

Syngnathus brevicaudus,

Trachyrhynchus brevicaudus Duncker,
Fauna Sudw. Austral. Michaelson
and Hartmeyer, vol. 2, p. 238, 1909 (reference)

Trachyrhynchus brevicaudus McCulloch,
Mem. Austral. Mus., vol. 5, pt. 1, p. 85, June 24, 1919 (reference).

Yozia brevicaudus Duncker, Mittail.
Naturh. Mus. Hamburg, vol. 32,
p. 109, 1914 (1915) (compiled).

Fisheries Maanaar, 1890, p. 91 (Tuticorin).
~~Serranus boenack~~ Peters, Monatsb. Akad. Wiss. Berlin, 1865, p. 105 (type).
Epinephelus boenack Bleeker, Ned. Tijds.
 Dierk., vol. 2, 1865, p. 277 (Amboina);
 Verslag. Akad. Amsterdam, ser. 2, vol. 2,
 1868, p. 338 (Reunion). — Boulenger,
 Cat. Fishes Brit. Mus., vol. 1, 1895, p. 180
 (Zanzibar, Madras, Vizagapatam, China,
 Shanghai, Formosa, Malay Archipelago,
 Java, Amboina), p. 371 (Pulo Satang,
 Sarawak). — Pellegrin, Bull. Soc. Zool.
 France, vol. 30, 1905, p. 85 (Yankin). —
Steindachner, Denks. Akad. Wiss. Wien,
 vol. 71, pt. 1, 1907, p. 125 (Yachin, Southern
 Arabia). — Seale, Philippine Journ. Sci.,
 vol. 9, 1914, p. 65 (Hong Kong).
Epinephelus boenack Weber, Siboga
 Exped., vol. ^{51. Fische} 65, 1913, p. 199 (Makassar).
Cephalopholis boenack Evermann and Seale,
 Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 77
 (Bacon).

~~Syngnathus~~ ^{Yozia} ~~lyngnathus~~ tigris (Castelnau)

1226

Syngnathus tigris Castelnau, Proc.
Linn. Soc. New South Wales, vol. 3,
p. 356, 377, 1877 type locality,
Port Jackson. — Macleay, Proc. Linn.
Soc. New South Wales, vol. 6, ^{pt. 1}, p. 291,
1882 (^{reference} copied). — Ogilby, Cat. Fish.
New South Wales, p. 60, 1886 (copied).

— McCulloch, Mem. Austral. Mus.,
vol. 5, pt. 1, p. 86, June 29, 1927 (reference).

— Duncker, Fauna Südw. Austral.
Michaelson and Hartmeyer, vol. 2, pt. 1,
p. 245, 1907 (Port Jackson). — McCulloch
Culloch, Fishes New South Wales,
ed. 1, p. 27, pl. 9, fig. 92b, 1919.

— Stead, Proc. Linn. Soc. New South
Wales, vol. 31, p. 428, 1906 (Hawkesbury
River).

10443. Varadero Bay, Mindoro.

July 23, 1908. Length 63 mm.

16031. Ambonia docks, Ambonia,
Dutch East Indies. December 7, 1907.
Length 117 to 102 mm. Largest with
hind caudal edge medianly dusky,
very narrow edge outside white.
3 examples:

10 examples. Ambonia port. December
7, 1907. Length 63 to 100 mm.

6 examples. Danawan and Vi Amil
Islands, Borneo. September 12, 1907.

Length 54 to 85 mm.

121833. Danawan Island and Vi Amil Island. September 26, 1907. Length 75 mm.

16440. Danawan and Vi Amil
Islands. September 27, 1907. Length
65 to 93 mm. 10 examples.

8900 to 8910, 8914. Mabul Island,
Sibuko Bay, Borneo. September 29, 1907.
Length 74 to 83 mm. 22 examples.

— Duncker, Fauna Südw. Austral.
 Michaelson and Hartmeyer, vol. 2, ^{pt. 1,} p.
 245, 1909 (Port Jackson).

Syngnathus

[^] (Gozia) tigris McCulloch, Rec. Western
 Austral. Mus., vol. 1, pt. 2, p. 83, pl. 11,
 fig. 2, 1912 (Fremantle). — Duncker,
 Mitteil. Naturh. Mus. Hamburg, vol.
 32, p. 108, 1914 (1915) (compiled).

Gozia tigris

7847. Iyayana Island, Jolo Sea.
January 7, 1909. Length 472 mm.

6454. Tili Bay, Lubang Island,
vicinity southern Luzon. July 15, 1908.
Length 490 mm.

Head 3 to $3\frac{1}{3}$ in trunk; head and trunk $1\frac{2}{3}$ in tail. Snout $2\frac{3}{4}$ to $2\frac{6}{7}$ in ~~snout~~ head; eye $2\frac{1}{3}$ to $2\frac{3}{4}$ in snout, 2 in postocular; snout rugose, not serrated, median keel before eyes, which more or less bifurcate between eyes; interorbital concave; opercle without keel, with radiating lines; occiput and nape with sharp raised keel.

Rings 17 + 36; rings without spines. Trunk deeper than broad, breast more or less swollen. Median lateral ^{trunk} keel continuous with lower caudal ~~edge~~ keel, extends over 1 or 2 trunk rings.

D. 24 or 25, on 3 trunk and 2 or 3 caudal rings; caudal rays 8; pectoral 15.

Light brown, each ring with more or less distinct ocellus above

12334
lateral median trunk keel and
on sides of tail. Dark-edged
semioval pearly spot on edge of
each body segment. Opercle
with several oblique dark lines.
Body with 3 darker cross bars,
tail with 7 more. Length 280
mm. (Mc Culloch.)

New South Wales.

Yozia
Ichthyocampus maculatus (Alleyne¹³²⁹
and Macleay)

Ichthyocampus maculatus Alleyne
and Macleay, Proc. Linn. Soc. New
South Wales, vol. 1, ^{pt. 4,} p. 353, pl. 17, fig.
2, 1876 (1877) (type locality,
Torres Strait,
Darnley Island, Queensland). —
Macleay, Proc. Linn. Soc. New South
Wales, vol. 6, ~~pt. 2,~~ p. 292, 188. (reference
~~compiled~~). — Mc Culloch and Whitley, Mem.
Queensland Mus., vol. 8, pt. 2, p. 137,
July 7, 1925 (reference). — Mc
Culloch, Mem. Austral. Mus., vol.
5, pt. 1, p. 90, June 29, 1929 (reference).

Depth $2\frac{1}{2}$ to $2\frac{3}{5}$; head $2\frac{2}{5}$ to $2\frac{1}{2}$, width $2\frac{2}{5}$ to $2\frac{2}{3}$. Snout $3\frac{7}{8}$ to 4 in head from snout tip; eye $5\frac{2}{3}$ to 6, $1\frac{1}{4}$ to 2 in snout, $1\frac{1}{8}$ to $1\frac{1}{3}$ in interorbital; maxillary reaches $\frac{1}{2}$ to $\frac{3}{4}$ in eye, expansion $1\frac{1}{5}$ to $1\frac{1}{3}$, length $2\frac{1}{10}$ to $2\frac{1}{8}$ in head from snout tip; teeth in narrow bands in jaws, biserial along sides of mandible; pair of canines in front of each jaw; narrow band of fine teeth on vomer and each palatine; interorbital $5\frac{1}{5}$ to $5\frac{2}{3}$, convex; hind preopercle edge denticulate, with 3 or 4 enlarged serrae at angle; opercular spines 3, median nearer lower, upper most advanced. Gill rakers $10+18$, lanceolate, equal gill filaments or $1\frac{4}{5}$ in eye.

Gozia maculata Duncker, Mitteil.
Naturh. Mus. Hamburg, vol. 32, p. 109,
1914 (1915) (copied)

p. 21, pl. 4, fig. 4 (Andaman). —
Klunzinger, Fische Roth. Meer., 1884, p. 5,
 pl. 2, figs. 1-2. — Day, Fauna Brit. India,
 vol. 1, 1889, p. 453. — Fowler, Proc. Acad.
 Nat. Sci. Phila., 1927, p. 275 (Philippines).
Epinephelus summana Bleeker, Atlas
 Ichth. Ind. Néerl., vol. 7, 1873-76, p. 61
 (Sumatra, Celebes, Buton, Buru, Amboina).
 — Sauvage, Hist. Nat. Madagascar, Poiss.,
 1891, p. 63. — Boulenger, Cat. Fishes Brit.
 Mus., vol. 1, 1895, p. 248 (Red Sea, Massarah,
 Zanzibar, Malay Archipelago, Borneo,
 Java, Manado, North Celebes, Amboina,
 Ponapé). — Steindachner, Abhandl.
 Senckenberg. Naturf. Gesell., vol. 25, 1900,
 p. 414 (Ternate). — Borsieri, Ann. Mus. Civ.
 Genova, ser. 3, vol. 1, 1904, p. 187 (Massana).
 — Snyder, Proc. U. S. Nat. Mus., vol. 42,
 1912, p. 498 (Okinawa). — Weber, Siboga
 Exped., vol. 6^{57 Fische}, 1913, p. 205 (Saleyer, Haingisi).

Depth 35; head $11\frac{2}{5}$. Snout $1\frac{2}{3}$ in head; eye 7, $4\frac{3}{5}$ in snout; opercle without ridge.

Rings 20 + 57, ridges well defined.

D. 25, on 3 trunk and 3 caudal rings; caudal very minute; pectoral $1\frac{1}{4}$ times eye.

Brownish, with yellow spot on each trunk ring below lateral line. Length 278 mm.

(Alleyne and Macleay.)

Queensland.

Grayish or brownish, paler below.
More or less silvery, especially in
young. Five to 7 dark vertical cross
bars, distinct in young, obsolete with
age. Fins grayish. Reaches 1000 mm.
(Barnard.)

South west Africa, Cape Colony, Natal.
A valued food fish.

Yozia intermedia (Kaup)

Trachyrhamphus intermedius Kaup,
Cat. Lophobr. Fish Brit. Mus., p.
24, 1856 (type locality, China? or
Japan). — Duméril, Hist. Nat. Poiss.,
vol. 2, p. 538, 1870 (types). —

Jordan and Snyder, Annot. Zool.
Japon., vol. 3, p. 58, 1901 (Japan). —
Chu, Biol. Bull. St. John's Univ., no. 1, p. 98, January 1931 (reference).

Syngnathus intermedius Günther,
Cat. Fish. Brit. Mus., vol. 8, p. 168,
1870 (compiled). — Bleeker, Nat. Tijds. Dierk., vol. 4, p. 126, 1873 (1874) (reference).
— Day, Fishes of
India, pt. 4, p. 678, pl. 193, fig. 6,
1878 (Madras); Fauna British
India, Fishes, vol. 2, p. 462, 1889.

Yozia intermedia Duncker, Mitteil.
naturh. Mus. Hamburg, vol. 32, p. 106,
1914 (1915) (Zanzibar; Ceylon; Madras;
? China or Japan).

1128

Cephalopholis boenack (Bloch).

Bodianus boenack Bloch, Naturg.
Aust. Fische, vol. 4, 1790, p. 43. Japan.
— Walbaum, Artedi Pisc., vol. 3, 1792,
p. 676 (on Bloch). — Forster, Fauna
Indica, 1795, p. 6. — Schneider, Syst.
Ichth. Bloch, 1801, p. 330.

Bodianus boenack Bloch, Naturg.
Austl. Fische, vol. 4, 1790, pl. 226.

Xeroramus boenack Valenciennes, Hist.
Nat. Poiss., vol. 2, 1830, p. 362 (Japan;
Moluccas). — Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 112 (Amboyna).
~~Peters, Monatsh. Akad. Wiss. Berlin,
1865, p. 105 (Amboyna)~~ — Kner, Reise
Novara, Zool., vol. 1, pt. 5, 1865, p. 21
(Singapore; Java). — Day, Fishes of India,
pt. 1, 1875, p. 23, pl. 6, fig. 1 (Waltair;
Mauritius); Fauna Brit. India, vol. 1,
1889, p. 455. — Thurston, Notes Pearl

? Syngnathus ²caylonensis Günther,
Cat. Fish. Brit. Mus., vol. 8, p. 108,
1870 (type locality, Ceylon; Zanzibar).

$1\frac{2}{3}$ to $1\frac{1}{2}$; ventral $1\frac{7}{8}$ to 2.

Pale brown generally, with traces of fine pale dots or small spots over all of head and body. Head rather sparsely spotted with deeper brown. On back along bases of dorsals, 4 deep brown blotches, each wider than interspaces and 2 narrower ones as saddles over upper surface of caudal peduncle. Fins all pale like body, with traces of blue spots.

Red Sea, Zanzibar, Mauritius, Indian Ocean, Polynesia. According to Boulenger
East Indies, Philippines.

reaches 375 mm.

5995. Zamboanga market. May 26, 1908. Length 310 mm.

A 1070. Ternate market, Ternate, Dutch East Indies. November 26, 1909. Length 290 mm.

Head $4\frac{1}{5}$ to vent; head and trunk $1\frac{1}{2}$ in tail. Snout longer than rest of head, with slight keel above; eye rather large; interorbital nearly flat; occiput and nape with median smooth ridge; opercle finely radiated.

Rings $24 + 46$; trunk rather deeper than broad. Median lateral trunk keel bent down and continuous with lower caudal keel. Upper side of tail much narrower than lower.

D. 26, base elevated; caudal well developed. Vent below beginning of second third of dorsal.

Coloration indistinct. Length 238 mm. (Günther.)

Zanzibar, India, Ceylon, China?, Japan.

1335

Yozia longirostris (Kaup)

- Trachyrhamphus longirostris Kaup,
Cat. Lophobr. Fish Brit. Mus., p. 24,
1856 (no type locality "captured by
Sir Edward Belcher"). — Duméril,
Hist. nat. Poiss., vol. 2, p. 538, 1870
(compiled). — Chu, Biol. Bull. St.
John's Univ., no. 1, p. 97, January 1931 (reference).
- Syngnathus longirostris Günther, Cat.
Fish. Brit. Mus., vol. 8, p. 167, 1870
— Bleeker, Nederl. Tijds. Dierk., vol. 4, p. 116, 1873 (1874) (reference).
(type). — Day, Fishes of India,
pt. 4, p. 677, pl. 173, fig. 5, 1878
(Madras; ^{China}); Fauna British India,
Fishes, vol. 2, p. 461, 1889.
- Yozia longirostris Duncker, Mitteil.
Naturh. Mus. Hamburg, vol. 32, p. 107,
1914 (1915) (Madras; China). — Chevey,
Inst. Océan. Indo Chine, 19^e note, p. 18,
August 25, 1932 (Pulo-Condore).

$3\frac{3}{4}$ to $3\frac{4}{5}$; pectoral $1\frac{3}{4}$ to $1\frac{4}{5}$;
ventral 2 to $2\frac{3}{5}$.

Brown, sometimes with obscure darker spots. Six dark brown broad vertical bands, usually as pair on trunk and pair at soft dorsal and anal. Often dark vertical bands may be imperfectly divided. Six slaty. Though fins unspotted, clouded with darker and dark vertical bands extend on dorsals. Young with paired fins and anal more or less dusky.

Arabia, Natal, Madagascar, India, East Indies, Philippines, China, Formosa, Japan, Polynesia. This species is close to Serranus awoara from Formosa and Japan.

1336

Snout more than half long as head, with low, rough, median ridge; ^{eye large,} orbital ridges prominent, smooth; interorbital flat, broad; occiput and nape with median ridge; opercle finely radiated.

Rings 26 + 54; deeper than broad, without spines. Egg pouch not half long as tail. Body $1\frac{2}{3}$ in tail.

D. 27, base elevated, vent below middle of fin which on 7 rings; caudal extremely small. Length 305 mm. (Günther.)

India, Indo China, China.

1336a

Yozia bicoarctata. (Bleeker)

Syngnathus bicoarctatus Bleeker,
Attt. Soc. Sci. Ind. Neerl., vol. 2,
no. 7, p. (9) 99, 1857 (type locality,
Amboina); (Sumatra), vol. 8, p.
72, 1859 (Amboina); Verslag.
Akad. Wet. Amsterdam, vol. 12,
p. 30, 1861 (Singapore). — Günther,
Cat. Fish. Brit. Mus., vol. 8, p.
176, 1870 (compiled). — Duméril,
Hist. Nat. Poiss., vol. 2, p. 569,
1870 (compiled).

Yozia bicoarctata Duncker, Mitteil.
Naturh. Mus. Hamburg, vol. 32,
p. 107, 1914 (1915) (Sumatra). —
Fowler, Mem. Bishop Mus., vol.
10, p. 115, 1928 (note).

(Sumatra, Lias, Singapore, Bintan,
Banda, Java, Celebes, Buru, Ambona,
New Guinea) ~~ist. 18, 1876-77, pt. (6) 346,~~

Serranus spilopareus Valenciennes,
Hist. Nat. Poiss., vol. 2, 1828, p. 338. No
locality (from Commerson). — Günther,
Cat. Fishes Brit. Mus., vol. 1, 1859, p. 125
(copied).

Serranus stigmaphomus Richardson,
Ichth. China Jap., 1846, p. 32. Canton
and North West coast of Australia.
— Günther, Cat. Fishes Brit. Mus., vol.
1, 1859, p. 111 (copied). — Macleay, Proc.
Linn. Soc. New South Wales, vol. 5, 1880,
p. 314 (North West coast Australia). — Károli,
Termész. Füzetek, Budapest, vol. 5, 1882,
p. 149 (Singapore). ~~ist. 18, 1876-77, pt. (6) 346,~~
~~ist. 18, 1876-77, pt. (6) 346,~~
~~ist. 18, 1876-77, pt. (6) 346,~~
— Elera, Cat. Fauna Filip., vol. 1, 1895,

Syngnathus zanzibarensis Günther,
Fishes of Zanzibar, p. 140, pl. 20,
fig. 5, 1865 (type locality, Zanzibar);
Cat. Fish. Brit. Mus., vol. 8, p.
168, 1870 (types; China). — Bleeker,
Nederl. Tijds. Dierk., vol. 4, p. 126,
1873 (1874) (reference). — Elera,
Fauna Filipinas, vol. 1, p. 596, 1895
(Luzon; Manila). — Gilchrist and Thompson,
Ann. South African Mus.,
vol. 13, pt. 3, p. 70, 1914 (off Umblango River, Natal, 22 fathoms);

Syngnathus zanzibarensis Chu,
Biol. Bull. St. John's Univ., no. 1,
p. 97, January 1931 (reference).
Ann. Durban Mus., vol. 4, pt. 4, p. 501, 1917 (copied).

Ichthyocampus maculatus (not
) Jouan, Mém. Soc. Sci.
Nat. Cherbourg, vol. 21, p. 332,
1877-78 (on Jouan, Mém. Soc.
Sci. Nat. Cherbourg, vol. 9, p. 178,
1863, type locality, New Caledonia).

Perca fusca Thunberg, Vet. Acad. Handl.,
vol. 14, 1793, p. 297, pl. 9, fig. (lower).

Sciaena formosa Shaw and Nodder, Nat.
Miscell., vol. 23, 1789-1813, pl. 1007

(on Rahter bontoo Russell, Fishes of
Coromandel, vol. 2, 1803, p. 22, pl. 26,
Vizagapatam).

Serranus formosus Valenciennes, Hist.
Nat. Poiss., vol. 2, 1828, p. 311 (Coromandel,
Pondicherry, Goa). — Richardson,
Ichth. China Jap., 1846, p. 233 (Canton).

— Günther, Cat. Fishes Brit. Mus., vol.
1, 1859, p. 154 (China; Mauritius). —

Guichenot, Notes Ste Réunion, vol. 2, 1862, p. 23. —

Day, Fishes of Malabar, 1867, p. 7. —

Kner, Reise Novara, Zool., vol. 1, pt. 5,
1865, p. 26 (Singapore). — Elera, Cat.

Fauna Filip., vol. 1, 1895, p. 463
(Luzon, Cavite, Santa Cruz).

— Károli, Termész. Füzetek, Budapest, vol.
5, 1882, p. 150 (Palabon, Java).

Yozia wakanoura Jordan and
Snyder, Proc. U. S. Nat. Mus.,
vol. 24, p. 8, pl. 6, 1901 (1902)
(type locality, Wakanoura). —
Jordan, Tanaka, Snyder, Journ.
College Sci. Tokyo, vol. 33, p. 96,
fig. 71, 1913 (reference). — Chu,
Biol. Bull. St. John's Univ., no.
1, p. 97, January 1931 (China;
likely on Günther).

Epinephelus formosus Bleeker, Atlas
Schth. Ind. Neerl., vol. 7, 1873-76, p. 44
(Java, Sumatra, Singapore, Borneo,
Celebes); vol. 8, 1876-77, pl. (62) 340,
fig. 3.

Petrometopon formosus Fowler, Journ.
Acad. Nat. Sci. Phila., ser. 2, vol. 12,
1904, p. 521 (Padang, Sumatra).

Serranus boelang Valenciennes, Hist.
Nat. Poiss., vol. 2, 1800, p. 308. Seas of
the Indies [East Indies]; vol. 6, 1830, p.
504 (Ceylon, Sunda Straits, New-
Guinea). — Duoy and Gaimard, Voy.
Astrolabe, Zool., vol. 2, 1834, p. 657,
pl. 3, fig. 4 (Sunda Straits). — Playfair,
Fishes of Zanzibar, 1866, p. 2 (Zanzibar).
— Weber, Zool. Forschungen. Austral.
Nemon, vol. 5, 1895, p. 262 (Lombok).

Epinephelus boelang Bleeker, Atlas Schth.
Ind. Neerl., vol. 7, 1873-76, p. 40, ~~pl. (68) 346,~~

Depth $40\frac{1}{2}$; head $11\frac{7}{8}$, width $5\frac{1}{2}$.
Snout $1\frac{5}{6}$ in head from snout tip;
eye 7, $3\frac{3}{4}$ in snout, greater than
interorbital; maxillary very small,
 $1\frac{3}{4}$ in orbit; interorbital $1\frac{1}{5}$ in
orbit, concave; opercle with radiating
striae, without keel.

Rings 24 + 63; ^{upper} trunk
keel approximates dorsal base
closely, not continuous with upper
caudal keel, though bar extends
over last 3 body rings; median
lateral trunk keel continuous
with lower caudal keel; lower
trunk keel not reaching lower
caudal keel, extends only far as
vent.

D. 28, on 3 trunk and 4
caudal rings, fin base $1\frac{2}{5}$ in total
head; A. very small, $1\frac{1}{4}$ in orbit;

cadmium yellow bars. Chin and front of head dusky. Greenish white and dusky line around dorsal and on top of caudal peduncle. Dorsal dusky orange. Pectoral slightly pink. Caudal and anal, also ventral, very pale vermilion.

33 examples. Sabon Island, Ragay Gulf, Luzon. March 10, 1907. Length 30 to 50 mm.

8281 to 8291, 8304 to 8313, 17780. San Miguel Island, Tabaco Bay, east coast Luzon. June 4, 1907. Length 30 to 49 mm. 23 examples.

23905. Tataan, Tawi Tawi Group.

February 21, 1908. Length 45 mm.

81 examples. Tongil Reef, south of Zamboanga. September 14, 1909. Length 34 to 50 mm. 6646 and 6647, 23171, 23172, 23425. Tulu

Bay, Jolo Island. September 19, 1909.

Length 38 to 52 mm. [1963]. 50 examples.

Yellowish generally. Cadmium yellow

pectoral rays 16; combined head
and trunk $1\frac{9}{10}$ in rest of body.

Largely uniform brownish,
with obscure dark blotches on
sides of trunk and smaller ones
on head. Iris gray. Fins pale.

Zanzibar, Natal, Singapore,
East Indies, Philippines,
China, Japan, Melanesia.

Translucent pearly, dusky above.
Caudal peduncle black. Opercle
with 3 opalescent blue spots, 2
behind opercle, 1 on middle of side
and 1 on upper cheek. Dark stripe
across preorbital to tip of mandible.
Iris dusky silvery, with purple
reflections. Breast more or less
scarlet. Dorsal pearl color, with
slight yellowish wash. Caudal lobes
very narrowly tipped with black,
rest of fin body color. Anal hyaline
purplish, with rosy tint and bright
yellow bar at base resting on black,
dusky continued on lower edge of
caudal peduncle. Vent black.
Pectoral hyaline. Ventral pale
scarlet. Other specimens paler,
without black. On opercle and
shoulder 4 or 5 narrow vertical

13368
A. N. S. P., one example. Hatal
coast. 1731. H. W. Bell Marley.
Length 313 mm.

One example. Jolo. September
16, 1909. Length 155 mm.

118 examples. Port Janelo, Luzon. ⁴⁵⁸

July 13, 1908. Length 26 to 48 mm.

16538 to 16541. Port Matalvi, Luzon.

November 22, 1908. Length 39 to 44 mm.

8429. Port Matalvi. November ^{46 examples} 23, ~~1908~~

1908. Length 29 to 47 mm. 46 examples.

1 example. Port Palapag, east coast Luzon. June 2, 1909. Length 40 mm.

23262. Port Palapag. June 3, 1909. Length 50 mm.

56 examples. Port Usan, west of Pinas Island. December 17, 1908. Length 31 to 56 mm.

10 examples. Rapu Rapu Island. June 22, 1909. Length 42 - 50 mm.

54 examples. Rara Island, Mantaguin Bay, Palawan Island. April 11, 1909. Length 36 to 53 mm.

2 examples. Romblon. March 25, 1908. Length 44 to 45 mm.

9 examples. Romblon. March 26, 1908. Length 33 to 51 mm. [4735 474, 480, 482, 483].

1335

Gozia
~~Syngnathus~~ superciliaris (Günther)

Syngnathus superciliaris Günther,
Rep. Voy. Challenger, vol. 1, pt. 6, p. 50,
1880 (type locality, Port Jackson,
4 to 6 fathoms). — Macleay, Proc.
Linn. Soc. New South Wales, vol. 9,
pt. 1, p. 60, 1884 (copied). — Gilby, Cat. Fish.
New South Wales, p. 60, 1886. —
McCulloch, Mem. Austral. Mus.,
vol. 5, pt. 1, p. 86, June 29, 1929
(reference).

Syngnathus supraciliaris Düncker,
Fauna Südw. Austral. Michadson and
Hartmeyer, vol. 2, pt. 1, p. 246, 1909 (reference).
Gozia superciliaris Düncker, Mitteil.
Naturh. Mus. Hamburg, vol. 32, p.
108, 1914 (1915) (South east Australia).

1455

13830. Powati Harbor, Malayan
Island. November 28, 1909. Length
53 to 93 mm. 7 examples.

5 examples. Powati Harbor. November
29, 1909. Length 62 to 84 mm.

3 examples. Matara Island.
November 26, 1909. Length 53 to 89 mm.

1 example. Lubuan Blanda
Island. December 14, 1909. Length
85 mm.

22308. Tidore Island, south of
Ternate. November 29, 1909. Length 67
mm.

9947. Doc Can Island, Sulu Sea.
January 7, 1910. Length 96 mm.

Tail twice long as trunk. Snout long as postorbital, with median ridge above ending on interorbital; ^{very} conspicuous filament above each eye; opercle without keel, with fine radiating striae.

Rings 20+38; without spines. Lateral trunk keel continuous with lower caudal keel. Neck compressed into trenchant ridge.

D. 23, on 3 trunk and 3 caudal rings; caudal and pectoral well developed.

Brownish gray, with indistinct darker cross bands, finely marbled with darker and lighter spots. Snout and lower half of head with oblique vermiculated brown lines. Length 168 mm. (Günther.)

New South Wales.

1336i

Yozia annulata (Macleay)

Ichthyocampus annulatus Macleay,
Proc. Linn. ^{Soc. New} South Wales, vol. 2, pt. 4,
p. 364, pl. 10, fig. 6, 1878 (type
locality, Port Darwin, North
Australia); — Duncker, Fauna
Sudw. Austral. Michaelsen and
Hartmeyer, vol. 2, p. 241, 1909. —
McCulloch, Mem. Austral. Mus., vol. 5,
pt. 1, p. 90, June 29, 1929 (reference).

Yozia annulata Duncker, Mitteil.
Naturh. Mus. Hamburg, vol. 32, p.
110, 1914 (1915) (compiled).

p. 460 (Luzon, Cavite, Santa Cruz).
~~*Xerranus stigmaphon*~~ Kent, Great Barrier Reef, 1893, p. 369 (Queensland).

Cephalopholis stigmaphon Jordan and

Seale, Bull. Bur. Fisher., vol. 26, 1906

(1907), p. 19 (Manila).

Xerranus nigro-fasciatus Humbon and

Jacquinet, Voy. Antioche, Zool., vol. 3,

1853, p. 36, pl. 2, fig. 1. No locality. —

Peters, Monatsb. Akad. Wiss. Berlin, 1865,

p. 105 (reference). — Martens,

Preuss. Exped. Ost-Asien, vol. 1, 1876, p. 385

(Amboina; Nagasaki Bay).

Xerranus microdon (part) Günther,

Cat. Fishes Brit. Mus., vol. 1, 1859, p. 116

(China).

Amboyna and

1336f

Depth 34; head $11\frac{1}{2}$, Snout $1\frac{3}{4}$
in head from snout tip; eye 6,
 $3\frac{1}{2}$ in snout; opercle with short
beel; occipital ridge small.

Rings 16 + 29; beels strongly
marked; median lateral beel
continuous with lower caudal beel;
well marked ventral trunk
beel to vent. Tail nearly twice
head and trunk.

D. 14; caudal small; pectoral
 $1\frac{1}{2}$ in eye. Egg pouch extends
over 12 caudal rings, forms 17
divisions.

Dark brown or almost black,
with number of more or less
distinct whitish rings, less
numerous than osseous rings.
Fins spotted. Length 305 mm.
(Macleay.)

Queensland.